

BIBLIOGRAPHY of
SOIL SCIENCE, FERTILIZERS
and GENERAL AGRONOMY
1953-1956

Prepared by the
COMMONWEALTH BUREAU OF SOILS
HARPENDEN
ENGLAND



COMMONWEALTH AGRICULTURAL BUREAUX

IN this volume, the eighth of the series, the 1953-1956 world production of 12,000 scientific papers on soil science, soil-plant relationships and the fertilizing of all crop plants is referenced and classified according to subject by the Universal Decimal Classification (U.D.C.).

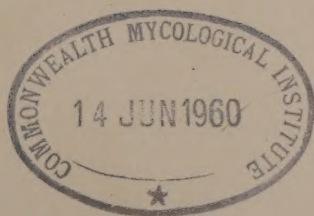
The enquirer into any particular subject can here obtain, at one opening, bibliographical details of every paper published on that subject in 1953-1956. In addition, most entries indicate where abstracts of the papers in question can be found in the abstract journal *Soils and Fertilizers*.

With the help of the detailed subject index provided, he can trace papers which, although primarily concerned with other matters, contain significant information on the subject of his interest.

Also included are a key to the U.D.C. numbers used, an explanation of the use of the U.D.C., an author index and a list of the 1200 periodicals in which the papers originally appeared.

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PREFACE

This, the eighth volume of the Bibliography of Soil Science, includes the papers abstracted in *Soils and Fertilizers*, Vols. XVII-XIX (1954-1956), and many others which, owing to lack of space, could not be abstracted. A reference to an abstract in *Soils and Fertilizers* is given in the Bibliography on the right of the page at the end of each entry—thus an abstract of the fourth entry in the Bibliography will be found in *Soils and Fertilizers*, Vol. XVIII, abstract No. 1421. Where an abstract reference is not given the paper was not noted in *Soils and Fertilizers*.

Arrangement of the Entries

Each entry in the Bibliography consists of a classification number, followed by the authors' names, the year of publication, the title of the paper (in English), and the reference to its original publication (journal, volume, pages). A capital letter in square brackets following the reference denotes the language in which the paper is written; a small letter denotes that there is a summary in another language—e.g., [G.e.] = German with English summary. English [E.] is only indicated for papers published in journals usually written in other languages. It has not been thought necessary to give a list of the letters used to indicate language, as the meaning of the letters is usually self-evident.

The Universal Decimal Classification

Entries are arranged by subject, in numerical order according to the Universal Decimation Classification (UDC).

The UDC is a system which provides for any subject being represented by a symbol in the form of a decimal number. The whole of knowledge is regarded as unity, and is divided into ten great classes represented by decimal numbers, viz.:—

- | | |
|-------------------------|-------------------------------------|
| .0 General works | .5 Pure sciences |
| .1 Philosophy | .6 Applied sciences |
| .2 Theology | .7 Art |
| .3 Social sciences. Law | .8 Literature |
| .4 Philology | .9 History. Geography.
Biography |

Further division of these classes is made by extending the decimal, each extension representing a specialization of the preceding one:—

.6	Applied sciences	.63144	Soil types
.63	Agriculture	.631445	Climatic soil types
.631	Agronomy	.6314457	Tropical soils
.6314	Soils	.63144573	Laterite

Although these numbers are decimals, it is customary to omit the first decimal point, and to insert a point between every three figures, e.g., the number for laterite is written 631.445.73. This facilitates reading, but it must always be remembered that the numbers are decimals, since entries are arranged in numerical decimal order, 63 succeeding 629 and preceding 631.

Each decimal number represents a specific subject, but, more frequently than not, papers deal with the interrelations of two or more subjects. Various devices are used for expressing compound notions, the most common being the colon (:). For example, papers on the fixation (631.414.3) of soil phosphates (631.416.2) are numbered

631.416.2 : 631.414.3

(pp 29-30), and are placed in the Bibliography between papers on soil phosphates in relation to animal diseases (619) and soil phosphates in relation to soil reaction (631.415), thus

631.416.2 Phosphates in soil

.....

631.416.2 : 619 Phosphates and animal diseases

631.416.2 : 631.414.3 Phosphate fixation

631.416.2 : 631.415 Phosphates in relation to soil reaction

.....

631.416.3 Trace elements (non-metallic) in soil.

An alternative symbol for expressing compound notions is the hyphen, which is used to save repetition where there is a common class number. The hyphen may only be used in certain specified places, for example, in the crops section where provision is made for any number in the 631 (agronomy) and 632 (plant-diseases) sections to be hyphenated to numbers in the 633 to 635 (economic-plants) sections. Thus the symbol for the nitrogenous manuring of wheat is shortened from

633.11 : 631.84 to 633.11-1.84
(wheat) (nitrogen
 fertilizers)

the hyphen replacing the first two common figures, 63.

A stroke (/) is used when two or more consecutive subjects are dealt with at a time, to show that all the intermediate numbers are included. The stroke is sometimes used to form symbolic numbers to represent ideas for which a single number is not provided, e.g., 631.461.1/3=decomposition, compounded of

631.461.1 ammonifying organisms

631.461.2 nitrite-forming organisms

631.461.3 nitrifying organisms

By including also 631.461.4 (denitrification) and 631.461.5 (nitrogen fixation) we get 631.461.1/5—nitrogen cycle.

Occasional use has also been made in the Bibliography of the so-called "analytical subdivisions" indicating general notions, such as colour, applicable to a series of subjects. Analytical subdivisions are distinguished by having the cypher 0 as the first figure, and they are suffixed to, and become a part of, the number denoting the main subject:—

061.6 colour

631.4.061.6 soil colour

Arrangement of the Bibliography

The arrangement of the Bibliography follows the classification's general principle of proceeding in order of increasing specialization, so that papers on the whole subject are followed by those on its branches. The entries follow in numerical (decimal) order, then within any number chronologically by year, and finally alphabetically by author under each year. Simple numbers precede colons and colons precede hyphens. A complete list of all the numbers used is given on pp xii-xxii, but the main key to the Bibliography is the alphabetical Subject Index at the end of the book.

The Index to the Bibliography

Entries in the Index indicate where all the papers dealing with any particular subject are to be found. Thus "Reaction, soil—631.415" denotes that all papers of which soil reaction is the principal theme occur in the Bibliography under that number. These papers are classified either merely as 631.415, or as 631.415 followed by a colon and another number, e.g., 631.415 : 631.8—the effect of fertilizers (631.8) on soil reaction. There are, however, scattered through different parts of the Bibliography numerous papers in which the soil-reaction number comes second (after a colon or hyphen). Thus, "the influence of pH on deficiency diseases" 632.191 : 631.415 is listed in the 632.191 section of the Bibliography (p 318), but the

existence of papers on this and related subjects, and the fact that they have a bearing on soil reaction are noted in the index as follows:

Reaction, soil 631.415

.....

deficiency diseases and 632.191 :

.....

nitrification and 631.461.3 :

the indented entries indicating that papers on soil reaction in relation to deficiency diseases and nitrification are listed under 632.191 : 631.415 and 631.461.3 : 631.415, respectively. The indented and main entries together comprise a complete index to every paper containing 631.415 anywhere in its classification number.

Certain numbers, particularly those outside the 63 section, never occur first in the classification symbols, but only after a colon. These are indexed in precisely the same way as the more frequently occurring agricultural and soil numbers, e.g.—

Manganese 546.711

in plant nutrition 631.811.9 :

No papers will be found under the simple number 546.711 but there are twelve under 631.811.9 : 546.711 (p 252), to which the above entry in the Index refers. When three numbers are used in classifying a paper, the first two are treated as one for purposes of cross-indexing, e.g.—

Mechanical composition of soil 631.435

aggregation in relation to organic

matter and 631.434 : 631.417 :

refers to a paper classified under 631.434 : 631.417 : 631.435 (p 115), the principle being to cross-index every number which occurs second or third to the number or numbers *preceding* it in the classification symbol. The same paper is also indexed (with others) under

Organic matter 631.417

structure and 631.434 :

Hyphened numbers are indexed in the same way as if they were colonized, but it must be remembered that the first two figures in the second of two hyphened numbers are omitted when the symbol is printed.

In order to economize space, hyphened numbers compounded of the crop sections (633/5) and any of the following sections

631.4 (soils) e.g. 633.72-1.4—tea soils,

631.5 (culture) e.g. 633.491-1.5—potato culture,

631.8 (fertilizers) e.g. 633.11-1.8—fertilizers for wheat,

are not specifically referred to in the Index, since almost every crop number is hyphenated to -1.4, -1.5 and -1.8. These sections all represent very general subjects, and the user interested in soils, culture or fertilizers for a particular crop need only ascertain the number assigned to the crop, and can refer immediately to the corresponding hyphenated part of the crop section in the Bibliography.

Where many, but not all, crop numbers are hyphenated to certain numbers—e.g. to -1.83, -1.84 and -1.85 (K, N and P fertilizers)—space is saved in the Index by not giving each crop a separate line, but merely listing the crop numbers, thus—

Phosphate fertilizers 631.85

.....
.....

Crops: 633.1-, 633.15-, 633.18-, ... 635-, 635.64-
indicating that references to phosphate fertilizing will be found under 633.1-1.85, 633.15-1.85, etc.

The subjects listed in the Index have been expressed in as brief and general a form as possible, since one entry frequently covers several papers dealing with the same subject from different standpoints.

The Geographical Bibliography

Papers with an essentially local interest, e.g., soil surveys, are listed separately in a “geographical” bibliography, pp 547-582. The ordinary classification numbers of these papers are preceded by a number, enclosed in brackets, indicating the place to which each paper refers, and the papers are arranged primarily according to these numbers and afterwards in the usual order. A list of geographical numbers is given on pp xxi-xxii, and they are also included in the Subject Index under the places to which they refer. Papers in the geographical Bibliography are shown in the Index by the letter (G), followed by the appropriate geographical numbers, e.g.,

Grassland 633.2.03
.....

(G) (489), (492), (493), (68.01), etc.

indicates that besides the references to grassland in the main Bibliography, others of local interest occur in the geographical Bibliography under (489)633.2.03—“grassland in Denmark”—etc.

INDEX TO CLASSIFICATION NUMBERS

ANALYTICAL NUMBERS

061.6	Colour		(083.72)	Nomenclature
-------	--------	--	----------	--------------

3 SOCIOLOGY

312	Population		34	Legislation
33	Economics			

52/3 ASTRONOMY. PHYSICS

525.5	Season		537.53	High-frequency phenomena
532.691	Surfactants		.531	X-rays
.712	Osmotic pressure			
533.15	Diffusion		538	Magnetic properties
535.21	Light		539.16	Radioactivity
.61	Infra-red light		.211	Surface
			.214	Plasticity
536.7	Thermodynamics		.215	Granulation
			.41	Cohesion

54 CHEMISTRY

541.1	Physical chemistry		546.284	Silica and silicates
541.12.034.6	Vapour pressure		.3/4	Alkali and alkaline-earth metals
.128	Catalysis			
.134.5	Oxidation-reduction potential		.35	Rubidium
.144.7	Photosynthesis		.42	Strontium
.48	Salts		.47	Zinc
544/5	Analytical chemistry		.49	Mercury
544.6	Spectrographic analysis		.56	Copper
			.621	Aluminium
545	Analysis (of fertilizers)		.711	Manganese
546	Inorganic chemistry		.72	Iron
546.13	Chlorine		.73	Cobalt
.15	Iodine		.74	Nickel
.16	Fluorine		.77	Molybdenum
.172.5	Nitrous oxide		.815	Lead
.173	Nitrites		.881	Vanadium
.184-33	Metaphosphate		547	Organic chemistry
.19	Arsenic		547.21	Hydrocarbons
.21	Oxygen		.415.1	Putrescine
.212.02	Heavy water. Deuterium		.454	Carbohydrates
			.458	Polysaccharides
.215	Hydrogen peroxide		.458.84	Lignin
.22	Sulphur		.88	Pectin
.221.1	Hydrogen sulphide		.461.42	Oxalic acid
.226	Sulphuric acid		.462.3	Maleic acid
.23	Selenium		.466	Amino acids
.264	Carbon monoxide		.652.1	Naphthalene
.27	Boron		.918	Arbutin
			.96	Proteins

INDEX TO CLASSIFICATION NUMBERS

547.963.3	Nuclein. Ribonucleic acid	549.623.5	Mica
.4	Haemoglobin	.59	Vermiculite
.979.7	Chlorophyll	.77	Antigorite
.98	Tannins	.83	Sepiolite
.995.1	Chitin	.9	Kaolin
549	Mineralogy	.92	Halloysite
549.1	Mineralogical analysis	.93	Montmorillonite
.324.3	Pyrites (iron)	.94	Illite
.514.58	Cristobalite	.67	Zeolite, bentonite
.62	Glauconite	.742.11	Dolomite, calcite
		.762.13	Jarosite

55 GEOLOGY

551	Physical geography	551.578.4	Snow
551.3.051	Silting	.584	Microclimate
.311.12	Glaciation	552	Petrography
.31	Dunes	552.321	Granodiorite
.33	Loess	.322	Lamprophyres
.7	Volcanic ashes	.323	Volcanic rocks
.41	Topography. Relief.	.4	Andesite
	Slope	.5	Basalt
.48	Run-off	.47	Serpentine
.481	Lakes	.5	Sediments
551.5	Meteorology.	553	Economic geology
	Climatology	553.72	Salt water
551.55	Wind	.97	Peat
.57	Atmospheric humidity	.982	Petroleum
.574	Condensation. Dew	.985	Asphalt
.577	Rainfall		

57 BIOLOGY

575	Hybrids	577.15	Enzymes
		.16	Vitamins
576.809.6	Bacteriophage	.17	Plant-growth substances
.7	Microbial antagonism.		Sex
	Antibiotics	.8	

58/9 BOTANY. ZOOLOGY

581.032.3	Wilting point of plants	581.192.6	Salt tolerance
581.1	Plant physiology	.5	Ecology. Vegetation
581.116	Transpiration	582.29	Lichens
.12	Respiration of plants	.34	Mosses
.143.26	Photoperiodism	.61	Diatoms
.144.2	Roots		
.4	Leaves	587.37	Gao (<i>Faidherbia albida</i>)
.192	Composition of plants.	589.42	<i>Impomea carnea</i>
	Quality of crops		
.192.1	Plant ash		

616 PATHOLOGY

616.006.46	Cancer	616.935	Dysentery
------------	--------	---------	-----------

619 ANIMAL HEALTH AND DISEASES

INDEX TO CLASSIFICATION NUMBERS

62 ENGINEERING

620.155	Instruments for measuring shearing resistance	620.19	Corrosion
		625.7/8	Roads
		629.135.2	Aeroplane

63 AGRICULTURE

631.3	Agricultural equipment. Mechanization	631.347.24	Sprinkling-irrigation equipment
631.333	Fertilizer distributors		

631.4 SOILS

631.4 : 538	Magnetic properties of soil	631.416.327	Boron
631.4 : 551.8	Palaeo-soils. Fossil soils	.328.4	Silicon
631.412	Physico-chemical properties	.4	Potassium
631.413	Electro-chemical properties	.5	Sodium
631.413.1	Buffering	.7	Calcium
631.414	Colloidal properties	.722.6	Gypsum
631.414.04	Flocculation	.8	Trace elements (metallic)
.05	Dispersion	.831.1	Alkali metals
.1	Capillarity	.834	Lithium
.2	Clay. Colloid com- plex. Hardpan	.835	Rubidium
.2:549	Clay mineralogy	.841/6	Alkaline earths
.2.025	Thixotropy	.843.1	Barium
.3	Absorption. Cation exchange	.846	Magnesium
.3.03	Cation-exchange capa- city	.847	Zinc
.323	Exchangeable anions	.856	Copper
.324	Exchangeable cations	.86/7	Sesquioxides
631.415	Soil reaction. pH	.862.1	Aluminium
631.415 : 545.371/2	Determination of soil reaction	.868.1	Gallium
631.415.7	Indicator plants	.871.1	Manganese
.8	pH range of crops	.872	Iron
631.416	Inorganic chemistry and composition of soil	.873	Cobalt
631.416.1	Nitrogen	.874	Nickel
.11	Ammonia	.877	Molybdenum
.12	Nitrite	.881.5	Lead
.13	Nitrate	.882.1	Titanium
.2	Phosphorus	.886	Antimony
.3	Trace elements (non-metallic)	631.417	Organic matter. Organic chemistry of soil
.313	Chlorine	631.417.2	Humic acid
.315	Iodine	.4	Carbon-nitrogen ratio
.316	Fluorine	.745.4	Carbohydrates
.319	Arsenic	.884	Lignin
.322	Sulphur	.746.6	Amino acids
.322.6	Sulphuric acid	.747.45	Uronic acids
323	Selenium	.796.332	Nucleic acid
		631.418	Soil solution
		631.42	Experimental methods and tech- nique. Pot experi- ments

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.42.005	Soil sampler	631.431	Density. Specific gravity. Shrinkage
631.421	Field experiments. Statistical methods	631.432	Groundwater
631.422	Qualitative soil analysis. Rapid chemical methods	631.432 : 551.48	Hydrology
631.423	Quantitative soil analysis	631.432.2	Soil moisture
631.423.3	Inorganic analysis	.21	Drying of soils. Evaporation
.4	Organic analysis	.3	Permeability. Mobility of soil constituents. Leaching
.5	Determination of salts	.4	Water-holding capacity of soil. pF. Moisture equivalent
.6	Determination of carbonates	631.433	Soil atmosphere
.7	Determination of exchangeable cations	631.433.1	Porosity. Aeration
631.425	Physical analysis	.2	Anaerobic conditions
631.425.1	Determination of density	.3	Respiration
.2	Measurement of water table	631.434	Soil structure
.22	Determination of soil moisture	631.434.1	Crusts, crusting
.221	Determination of evaporation	631.435	Mechanical composition of soil. Texture
.23	Determination of permeability	631.435.1	Sandy soils
.24	Determination of moisture capacity	.3	Loams
.25	Determination of hygroscopicity	.4	Clay soils
.3	Analysis of soil air	.5	Stony soils
.31	Determination of porosity	631.436	Soil temperature
.33	Determination of micro-organic respiration	631.436.5	Effect of heat on soil
.4	Aggregate analysis	.6	Effect of frost on soil
.5	Mechanical analysis	631.437	Electrical properties of soil
.6	Measurement of soil temperature	631.437.213	Electric potential
.65	Thermal analysis	.31	Conductivity
.66	Determination of freezing point	.362	Electro-osmosis
.7	Measurement of electrical properties	631.44	Soil classification. Soil types
.722.61	Measurement of dielectrical properties	631.44 : 551.41	Catena
631.427	Biological analysis	631.445	Zonal soil types
631.427.1	Mesobiological analysis	631.445.1	Organic soils. Moor soils
.2	Microbiological analysis	.11	Arctic soils
.3	Determination of plant nutrients by plants. Foliar diagnosis. Mitscherlich and Neubauer methods	.12	High-moor soil. Raised bog
.4	Determination of plant nutrients by micro-organisms	.13	Heath soil
		.14	Fen. Low-moor soil
		.15	Mountain soil
		.2	Podzol
		.3	Brown earth. Brown forest soil
		.35	Grey forest soil
		.4	Chernozem
		.5	Arid soils
		.51	Chestnut-coloured soil
		.52/3	Saline and alkali soils (solonchak-solonets)
		.52	Solonchak
		.53	Solonets. Takyr
		.54	Solod

INDEX TO CLASSIFICATION NUMBERS

631.445.55	Desert soil		631.461.52	Symbiotic	nitrogen
.6	Red earths.	Terra		fixation.	Nodule
	rossa			bacteria	
.7	Tropical and sub-		.61	Cellulose-decomposing	
	tropical soils			organisms	
.72	Black cotton soil		.71	Sulphur bacteria	
.73	Laterite		.72	Iron bacteria	
.9	Rendzina		.74	Miscellaneous bacteria	
631.452	Fertility		631.462	Soil sterilization	
631.453	Toxicity in soils		631.466.1	Fungi. Mycorrhiza	
631.458	Soil exhaustion		.2	Actinomycetes	
631.459 Erosion			.3	Algae	
631.459 : 551.55	Wind erosion		631.467.1	Protozoa	
631.459 : 631.61	Soil conservation		.2	Nematodes in soil	
631.46 Soil microbiology.			631.468	Macrofauna and meso-	
Micro-organisms				fauna	
631.46 : 581.144.2			631.468.516	Earthworms	
	Rhizosphere		631.47	Land classification,	
631.461	Bacteria			utilization and	
631.461.1/5	Nitrogen cycle			survey	
.1/3	Decomposition of		631.471	Mapping and surveying	
	organic matter		.472	Soil profile	
.1	Ammonification		.473	Soil surveys	
.2	Nitrite-forming orga-		631.48	Soil formation	
	nisms		631.48 : 56	Phytoliths	
.3	Nitrification		631.48 : 631.431		
.4	Denitrification			Gilgai	
.5	Nitrogen fixation		631.48 : 631.432		
.51	Non - symbiotic nitro-			Gley	
	gen fixation. Azo-		631.48 : 631.435.5		
	tobacter			Stone line	
			631.482	Alluvial soils	
			.483	Weathering	
			.486	Concretions	

631.5 CULTURAL OPERATIONS

631.51	Cultivation and til-		631.557	Yields	
	lage		.572	Straw	
631.512	Deep cultivation.		631.58	Agricultural	
	Subsoiling			systems	
.513	Cultivation by explo-		631.581	Fallowing	
	sives		.582	Rotations	
.515	Rolling		631.582 : 631.459		
.516	Hoeing			Strip cropping	
.517	Rotary cultivation		631.584	Catch crops. Cover	
.531	Seed. Sowing			crops. Mixed crops	
.544.3	Hot bed		.585	Stubble-mulch farming	
.544.7	Mulching. Soil protec-		.586	Dry farming	
	tion		.588.1	Electricity in agricul-	
.547.1	Germination			ture	
.2	Plant growth		.589	Burning as a cultiva-	
.4	Flowering			tion measure	
.548	Water culture.				
	Soil-less cultivation.				
	Hydroponics				

INDEX TO CLASSIFICATION NUMBERS

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631.611	Reclamation of grass- land	631.62	Drainage
.612	Reclamation of dunes	631.62 : 626.862.1	Tile drainage
.613	Contour cultivation. Terracing	631.62 : 626.862.6	Mole drainage
.615	Reclamation of waste land	631.622	Lysimetry
.616	Reclamation of saline and alkali soils	631.67	Irrigation
.617	Reclamation of deserts	631.67 : 626.862.6	Underground irrigation
.618	Reclamation of indus- trial land. Spoil- banks	631.67 : 631.347.24	Overhead irrigation
		631.671	Irrigation water

631.8 FERTILIZERS AND MANURES

631.811	Plant nutrition	631.821 : 669.16	Blast-furnace slag
631.811.1	Nitrogen	631.821 : 669.71	Aluminium - industry mud
.2	Phosphorus	631.821.1	Lime
.3	Potassium	631.821.1 : 631.83	Silico-potassic lime
.4	Calcium. Lime require- ment	631.821.2	Gypsum
.5	Sodium	631.822	Soil amendments
.6	Magnesium	631.822 : 551.3.0.51	Silt
.7	Sulphur	631.822 : 665.5	Gumbrin
.8	Chlorine	631.823	Salt
.9	Trace elements	631.824	Magnesium fertilizers
.91	Water	631.828	Chelates. Frits. Trace- element fertilizers
.92	Carbon dioxide	631.83	Potassium fertilizers
631.812	Production and storage of fertilizers	631.83 : 666.97	Cement dust
.813	Properties and reac- tions of fertilizers	631.84	Nitrogen fertilizers
.814	Loss of fertilizing prin- ciples	631.84 : 546.174	Nitrogen dioxide
.815	Residual value	631.841	Ammoniacal fertilizers
631.816	Application of ferti- lizers	.1	Ammonium sulphate
631.816.2	Time of application	.2	Ammonium chloride
.3	Methods of application	.5	Cyanamide
.32	Placement of fertilizers	.6	Dicyanodiamide
.33	Seed soaking and dusting	.7	Urea
.34	Injection. Fertilizer lance	.8	Ammonia liquor.
.35	Application in solu- tion	631.842	Nitrate fertilizers
.36	Spraying	.2	Potassium nitrate
631.82	Mineral amend- ments other than N, P, K	.4	Ammonium nitrate
631.821	Calcareous amend- ments	.6	Calcium nitrate
631.821 : 664.1	Sugar-factory lime	631.847.2	Bacterial inoculation
631.821 : 666.92	Shale ash	631.85	Phosphate fertilizers
		631.85 : 546.185.33	Metaphosphate

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631.851	Rock phosphate.	631.871	Plant residues
.852	Phosphorite	.873	Seaweed
.853	Bone meal	.874	Green manure
.854	Basic slag	.875	Composts
631.854 : 599.4	Guano	.876	Oil cakes
	Bat guano	.876.2	Distillery waste
.855	Superphosphate	.9	Industrial residues
.856	Dicalcium phosphate	631.876.9 : 547.548.82	Cellophane
.858	Calcined phosphates	631.876.9 : 576.809.7	Penicillin waste
631.859.1	Ammoniated phosphates	631.876.9 : 633.61	Filter-press cake
.42	Magnesium phosphates	631.876.9 : 634.985	Bark fibre
631.86/7	Organic manures	631.877	Waste waters
631.86/7 : 665.7	Manure gas	.878	Coal and peat
631.86	Farmyard manure.	.879.1	Town refuse
	Animal manures	.2	Sewage
631.86 : 636.1	Horse manure	.3	Sawdust
631.86 : 636.3	Sheep manure	631.88	Soil conditioners.
631.86 : 636.5	Poultry manure		Krilium
631.86 : 636.92	Rabbit manure	631.893	Mixed and compound fertilizers
631.86 : 637.631	Feathers as manure	631.893.12	Nitrophosphate
631.862	Liquid manure	.123	Nitrophoska
.867.4	Fish residues	.14	Nitrochalk
.5	Blood	.16	Nitrogen-magnesia
.6	Hoof and horn	.23	Phospho-potassic fertilizer
631.87	Vegetable manures		

632 PLANT DISEASES AND PROTECTION

632.111	Frost injury	632.565.7	Doublegee (<i>Emex australis</i>)
.112	Drought injury	.568.32	Wild radish
.181	Flood injury	.573.6	Gorse
.183	Wind injury.	.7	<i>Mimosa pudica</i>
	Lodging	.575.7	Leafy spurge (<i>Euphorbia esula</i>)
.184	Smoke injury	.579	Cape tulip (<i>Homeria collina</i>)
.188	Leaf scorch	.588.6	<i>Chamaenerion angustifolium</i>
.19	Deficiencies and excesses in plants	.591.24	Heather
.191	Deficiency diseases.	.594.2	Bindweed
	Chlorosis	.92	Mintweed (<i>Salvia reflexa</i>)
.192	Toxicity in plants	.595.16	Witchweed (<i>Striga</i>)
632.2	Nematode diseases	.599.8	Thistle
632.3	Bacterial diseases	632.7	Insect pests. Entomology
632.4	Fungal diseases	.732	Termites
632.51	Weeds	.765	Wireworms
.536	Bracken	632.8	Virus diseases
.554.21	<i>Alopecurus myosuroides</i> . Barnyard grass	632.95	Pesticides
	(<i>Echinochloa crus-galli</i>). Crabgrass	.951	Insecticides
	(<i>Digitaria sanguinalis</i>). Sorghum	.953	Soil disinfectants
	<i>halipense</i> . Wild oat	.954	Weedkillers
632.554.22	Nut grass (<i>Cyperus rotundus</i>)	.954 : 577.17	Selective weedkillers
.556	Water weeds	.954.8	Sodium chlorate
.556.7	Water hyacinth		
.557.1	Rushes		
.562	Halogeton		

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633 CULTIVATED CROPS

633.1	Cereals	633.51	Cotton
633.11	Wheat	.513	Kapok
.12	Buckwheat	.52	Flax
.13	Oats	.522	Hemp
.14	Rye	.523	Jute
.15	Maize	.524.3	Kenaf
.16	Barley	.525.1	Ramie
.17	Millet, sorghum	.525.2	Nettle
.18	Rice	.526.23	Sisal
.19	Bajri (<i>Pennisetum typhoideum</i>)	.526.42	<i>Sansevieria</i>
		.584.5	Bamboo
633.2	Grasses	633.6	Sugar and starch plants
633.2.03	Grassland	633.61	Sugar cane
633.2.03-1.582		.63	Sugar beet
	Ley farming	.682	Cassava
633.21	Bluegrass (<i>Poa pratensis</i>)	.685	Yam
.22	Cocksfoot	633.7	Stimulants
.24	Timothy	633.71	Tobacco
.261	Bermuda grass	.72	Tea
.262	Brome grass	.73	Coffee
.263	Rye grass	.74	Cacao
.282	Sudan grass	.79	Hops
.283	Guinea grass (<i>Panicum maximum</i>). Kikuyu grass. Napier grass.	633.8	Aromatic, medicinal and oil plants
	Para grass	631.812.42	Citronella
.287	Rhodes grass	.812.62	Geranium
.288	Lovegrass (<i>Eragrostis</i>). Pampas grass (<i>Coriaderia selloana</i>)	.822	Peppermint (<i>Mentha piperita</i>)
		.825	Ginger
.289	<i>Agropyron</i>	.832	Clove
633.3	Legumes	.841	Pepper
633.31	Lucerne	.842	Paprika
.32	Clovers	.846	Horse radish
.321	Red clover (<i>Trifolium pratense</i>)	631.852.261	<i>Camellia japonica</i>
.322	Ladino clover (<i>T. repens</i> L. var. <i>latum</i>)	.852.52	Groundnut, peanut
.326	Subterranean clover	.853.349.3	Colza
.327	Crimson clover	.853.55	Castor-oil plant (<i>Ricinus</i>)
.329	Berseem (<i>T. alexandrinum</i>)	.853.74	<i>Sesamum</i>
633.34	Soybean	.854.56	Tung (<i>Aleurites</i>)
.35	Vetch	.854.748	<i>Lallemantia iberica</i>
.364	Lespedeza	.854.78	Sunflower
.366	Sweet clover (<i>Melilotus</i>)	.855.34	Oil palm
.367	Lupin	.861.9	Arnotto tree (<i>Bixa orellana</i>)
.378	<i>Lathyrus</i>	.879	Wattle
.379	Kudzu. Lima bean	.883.85	Areca nut
.393	Cactus	.887.791	Pyrethrum
633.4	Root crops	.887.827.1	Valerian
633.41	Beetroot	.888.421	<i>Datura</i>
.42	Rape. Turnip	.888.43	<i>Hyoscyamus</i>
.426	Rutabaga. Swede	633.91	Rubber plants
.491	Potato	633.912	<i>Hevea</i>
.492	Sweet potato	.913.31	Guayule (<i>Parthenium argentatum</i>)
.494	Jerusalem artichoke	.913.32	Kok-saghyz (<i>Taraxacum</i>)
633.5	Fibre crops		

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634 ORCHARDS. FRUIT

634.1	Pome fruits	634.5	Nuts
634.11	Apple	634.521	Pecan
.13	Pear	.55	Almond
.14	Quince	.573	Cashew nut
634.2	Stone fruits	634.6	Palm fruits
634.22	Plum. Prune	634.61	Coconut
.23	Cherry	.62	Date palm
.25	Peach	.63	Olive
634.3	Citrus	.651	Papaya
634.31	Orange	.653	Avocado
.322	Tangerine	634.7	Bush fruits
.323	Grapefruit	634.711	Raspberry
.334	Lemon	.723	Black currant
.37	Fig	.73	Blueberry
.38	Mulberry	.75	Strawberry
634.4	Small fruits	.76	Cranberry
.42	Guava	.771	Banana
.441	Mango	.774	Pineapple
.461	<i>Leucaena glauca</i> (ipil-ipil). Tamarind	634.8	Viticulture

634.9 FOREST. FORESTRY

634.9-1.4	Forest soils	634.972.3	Poplar
634.95	Silviculture	.4	Chestnut
634.952.2	Clear cutting	.5	Beech
.953.6	Shade trees.	.6	Birch
	Windbreaks.	.8	Elm
	Shelterbelts	.973.662	Alder
.956.4	Forest nurseries	.713.6	Acacia. Black locust
.957	Afforestation		(<i>Robinia</i>)
634.972/3	Deciduous trees.	.883	Eucalyptus
	Hardwoods	634.975	Conifers
634.972.1	Oak	634.989.84	Forest litter

635 VEGETABLES

635.13	Carrot	635.54	Chicory
.25	Onion	.561	Watercress
.262	Garlic	.61	Melon
.31	Asparagus	.62	Squash
.32	Artichoke	.63	Cucumber
.34	Cabbage	.64	Tomato
.347	Kale	.646	Egg plant
.35	Cauliflower	.65	Beans
.36	Brussels sprouts	.656	Pea
.41	Spinach	.75	Anise
.52	Lettuce	.8	Mushroom
.53	Celery		

635.9 ORNAMENTAL HORTICULTURE

635.935	Bulbous plants	635.939.516	Antirrhinum
.935.79	Gladiolus	.939.94	Orchid
.936.751	Delphinium	.939.98	Chrysanthemum
.937.12	Hydrangea	.944	Hyacinth
.937.34	Rose	.946.69	Carnation
.939.124	Azalea. Rhododendron	.964	Lawns. Turf
.939.183	Primula. Cyclamen	.98	Greenhouse plants
.939.514	Petunia		

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636/9 ANIMAL PRODUCTS

636.084.22	Grazing	639.61	Sponge spicules
637.1	Milk	.62	Coral
638.16	Honey		

66/93 MISCELLANEOUS

661.183.2	Carbon black.	677.31	Wool
	Charcoal	778.35	Aerial photography
663.12	Yeast	778.6	Colour photography
664.15	Molasses	902.6	Archaeology
666.97	Cement	93	History

GEOGRAPHICAL NUMBERS

(4) EUROPE

(411)	Scotland	(471)	Finland
(416)	Northern Ireland	(474.2)	Estonia
(417)	Republic of Ireland	(474.3)	Latvia
(42)	England	(474.5)	Lithuania
(43)	Germany	(481)	Norway
(436)	Austria	(485)	Sweden
(437)	Czechoslovakia	(489)	Denmark
(438)	Poland	(492)	Holland
(439)	Hungary	(493)	Belgium
(44)	France	(494)	Switzerland
(45)	Italy	(495)	Greece
(458)	Sicily	(496)	Turkey (in Europe)
(46)	Spain	(497.1)	Yugoslavia
(469)	Portugal	(498)	Rumania
(47)	Russia		

(5) ASIA

(51)	China	(569.1)	Syria. Lebanon
(52)	Japan	(569.2)	Israel
(529.1)	Taiwan	(569.5)	Jordan
(54)	India	(57)	Siberia
(545)	Pakistan	(58)	Kazakhstan
(548.7)	Ceylon	(581)	Afghanistan
(56)	Turkey (in Asia)	(591.9)	Andaman Islands
(564.3)	Cyprus	(595)	Malaya
(567)	Iraq		

(6) AFRICA

(61)	North Africa	(665.1)	Gambia
(611)	Tunisia	(665.2)	French Guinea
(62)	Egypt	(665.7)	Portuguese Guinea
(624)	Sudan Republic	(666)	Ivory Coast. Liberia
(63)	Ethiopia (Abyssinia)	(667)	Gold Coast
(64)	Morocco	(668.1)	Togo
(649)	Canary Islands	(669)	Nigeria
(65)	Algeria	(671)	Cameroons
(661)	French West Africa	(671.8)	Spanish Guinea
(663)	Senegal	(672)	French Equatorial
(664)	Sierra Leone		Africa

INDEX TO CLASSIFICATION NUMBERS

(673)	Angola	(68.01)	Union of South Africa
(675)	Congo	(689.1)	Southern Rhodesia
(676)	East Africa	(689.4)	Northern Rhodesia
(676.1)	Uganda	(689.7)	Nyasaland
(676.2/9)	Kenya	(691)	Madagascar
(677)	Somaliland	(698.1)	Réunion Island
(678)	Tanganyika	(698.2)	Mauritius
(678.1)	Zanzibar	(698.3)	Rodrigues
(679)	Mozambique		

(7) NORTH AND CENTRAL AMERICA

(71)	Canada	(74)	North-eastern United States (Connecticut, New England, New Jersey, New York, Pennsylvania)
(711)	British Columbia		
(712)	Prairie Provinces	(75)	South-eastern United States (Florida, North and South Carolina)
(712.3)	Alberta		
(713)	Ontario	(76)	Southern United States (Mississippi, Tennessee)
(714)	Quebec		
(716)	Nova Scotia	(77)	North-Central United States (Illinois, Iowa, Michigan)
(72)	Mexico		
(728/9)	Caribbean	(78)	Middle-Western United States (Great Plains, Kansas, South Dakota)
(728.4)	Salvador		
(728.6)	Costa Rica	(79)	Western United States (California, Nevada, Utah)
(729.1)	Cuba		
(729.2)	Jamaica		
(729.3)	Dominica		
(729.4)	Haiti		
(729.5)	Puerto Rico		
(729.7)	Leeward Islands		
(729.8)	Guadeloupe. Martinique. Trinidad.		
(73)	United States		

(8) SOUTH AMERICA

(81)	Brazil	(86)	Colombia
(82)	Argentina	(87)	Venezuela
(83)	Chile	(883)	Surinam
(85)	Peru	(899)	Uruguay

(9) OCEANIA

(92)	Indonesia	(944)	New South Wales
(931)	New Zealand	(945)	Victoria
(932)	New Caledonia	(946)	Tasmania
(938)	Norfolk Islands, South Pacific	(948.1)	Northern Australia
(94)	Australia	(95/6)	Pacific Islands
(941)	Western Australia	(95)	New Guinea
(942)	South Australia	(961)	Fiji
(943)	Queensland	(967.2)	Guam
		(968.1)	Marshall Islands

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LIST OF ABBREVIATIONS OF JOURNALS AND PERIODICALS

[The abbreviation is followed by the full title of the journal, and place of publication (where known).]

- ASTM spec. Publ., spec. tech. Publ.** American Society for Testing Materials. Special Publication. Special Technical Publication. Philadelphia.
- ASTM Stand. annu. Meet.** American Society for Testing Material Standards. Annual Meeting. Philadelphia.
- Acta agralia fenn.** Acta Agralia Fennica. Helsinki.
- Acta Agric. scand.** Acta Agriculturae Scandinavica. Stockholm.
- Acta Agric. sin.** Acta Agriculturae Sinica. Peking.
- Acta agron. Acad. Sci. hung.** Acta Agronomica Academiae Scientiarum Hungaricae. Budapest.
- Acta agron. Palmira.** Acta Agronómica. Palmira, Colombia.
- Acta biol. Acad. Sci. hung.** Acta Biologica Academiae Scientiarum Hungaricae. Budapest.
- Acta bot. sin.** Acta Botanica Sinica. Peking.
- Acta chem. scand.** Acta Chemica Scandinavica. København.
- Acta for. fenn.** Acta Forestalia Fennica. Helsingfors.
- Acta geogr. Helsinki.** Acta Geographica. Helsinki.
- Acta geol. Acad. Sci. hung.** Acta Geologica Academiae Scientiarum Hungaricae. Budapest.
- Acta microbiol. Acad. Sci. hung.** Acta Microbiologica Academiae Scientiarum Hungaricae. Budapest.
- Acta microbiol. polon.** Acta Microbiologica Polonica. Lublin.
- Acta pedol. sin.** Acta Pedologica Sinica. Peking.
- Acta pharm. jugoslav.** Acta Pharmaceutica Jugoslavica. Belgrade.
- Acta Soc. Bot. Polon.** Acta Societatis Botanicorum Poloniae. Warszawa.
- Acta zool. Acad. Sci. hung.** Acta Zoologica Academiae Scientiarum Hungaricae. Budapest.
- Advanc. Agron.** Advances in Agronomy. New York.
- Advanc. Sci.** Advancement of Science. London.
- Afr. Soils.** African Soils (Sols Africains). Paris.
- Agra Univ. J. Res. (Sci.).** Agra University Journal of Research: Science. Agra.
- Agrártud. Egyet. agron. Kar Kiadv.** Agrártudományi Egyetem Agronómiai Kar Kiadványai. Budapest.
- Agrártudomány.** Budapest.
- Agric. Chemic.** Agricultural Chemicals. Baltimore.
- Agric. Econ. Res.** Agricultural Economics Research. Washington.
- Agric. Engng Mich.** Agricultural Engineering. St. Joseph, Mich.
- Agric. Gaz. N.S.W.** Agricultural Gazette of New South Wales. Sydney.
- Agric. Inst. Rev.** Agricultural Institute Review. Ottawa.
- Agric. J. Fiji.** Agricultural Journal. Department of Agriculture, Fiji. Suva.
- Agric. Pakist.** Agriculture Pakistan. Karachi.
- Agric. Progr.** Agricultural Progress. London.
- Agric. Rec. Dubl.** Agricultural Record. Journal of the Agricultural Science Association. Dublin.
- Agric. Res. Taiwan.** Agricultural Research. Taiwan Agricultural Research Institute. Taipei.
- Agric. Rev. (formerly): Brit. agric. Bull.** Agricultural Review. London.
- Agricoltura ital.** Agricoltura Italiana. Pisa.
- Agricultor venezol.** Agricultor Venezolano. Caracas.
- Agricoltura Louvain.** Agricultura. Louvain.
- Agricoltura Madr.** Agricultura. Madrid.
- Agricoltura mod. N. Orleans.** Agricultura Moderna. New Orleans.
- Agricoltura téc. Santiago.** Agricultura Técnica. Santiago de Chile.
- Agricoltura trop.** Agricultura Tropical. Bogotá.

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- Agriculture Paris.** Paris.
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- Agrogeol. Julk.** Agrogeologisia Julkaisuja. Helsinki.
- Agrokém. Talajt.** Agrokémia és Talajtan. Budapest.
- Agron. angol.** Agronomía Angolana. Luanda.
- Agron. J.** Agronomy Journal. Washington.
- Agron. lusit.** Agronomia Lusitana. Sacavém.
- Agron. trop. Maracay.** Agronomía Tropical. Maracay, Venezuela.
- Agron. trop. Nogent.** Agronomie Tropicale. Nogent-sur-Marne.
- Agronomía La Molina.** Agronomía. La Molina, Peru.
- Agronomía Monterrey.** Agronomía. Monterrey.
- Agronomía Perú.** Lima.
- Agronomía R. de Janeiro.** Agronomía. Rio de Janeiro.
- Agropochv. Meliorats.** Agropochvovedenie i Melioratsiya.
- Akad. Nauk gruzin. SSR.** Akademiya Nauk Gruzinskoi S.S.R. Tbilisi.
- Ala agric. Exp. Sta. Circ.** Alabama Agricultural Experiment Station. Circular. Auburn.
- Alberta Dep. Agric. Bull.** Province of Alberta. Department of Agriculture. Bulletin. Edmonton.
- Alexandria J. agric. Res.** Alexandria Journal of Agricultural Research. Alexandria.
- Allahabad Fmr.** Allahabad Farmer. Allahabad.
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- Amer. J. Sci.** American Journal of Science. New Haven.
- Amer. met. Soc. Bull.** American Meteorological Society. Bulletin. Easton, Pa.
- Amer. Min.** American Mineralogist. Ann Arbor, Mich.
- Amer. Potato J.** American Potato Journal. Washington.
- Amer. Soc. test. Mat.** (see ASTM). American Society for Testing Materials. Philadelphia.
- An. Bromat.** Anales de Bromatología. Madrid.
- An. Dep. Invest. Cient. Univ. Cuyo.** Anales del Departamento de Investigaciones Científicas. Universidad Nacional de Cuyo. Mendoza, Argentina.
- An. Edafol. Fisiol. veg.** Anales de Edafología y Fisiología Vegetal. Madrid.
- An. Esc. Agric. Queiroz.** Annaes da Escola Superior de Agricultura "Luis de Queiroz". Piracicaba.
- An. Estac. exp. Aula Dei.** Anales de la Estación Experimental de Aula Dei. Zaragoza.
- An. Inst. bot. A. J. Cavanilles.** Anales del Instituto Botánico A. J. Cavanilles. Madrid.
- An. Inst. nac. Invest. agron.** Anales. Instituto Nacional de Investigaciones Agronómicas. Madrid.
- Analyst Lond.** Analyst. London.
- Analyst's Grav.** Analyst. 's Gravenhage.
- Analyt. Chem.** Analytical Chemistry. Easton, Pa.
- Analyt. chim. acta.** Analytica Chimica Acta. New York-Amsterdam.
- Andhra agric. J.** Andhra Agricultural Journal. Bapatla.
- Angew. Bot.** Angewandte Botanik. Berlin.
- Angew. Met.** Angewandte Meteorologie. Berlin.
- Angew. PflSoz.** Angewandte Pflanzensoziologie. Wien.
- Ann. Acad. Hort. Bp.** Annales Academiae Hort- et Viticulturae. Budapest.
- Ann. Acad. Sci. fenn.** Annales Academiae Scientiarum Fennicae. Helsinki.
- Ann. Accad. ital. Sci. for.** Annali. Accademia Italiana di Scienze Forestali. Firenze.
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- Antibiot. Ann.** Antibiotics Annual. New York.
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- Arch. Forstw.** Archiv für Forstwesen.
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- Arch. Inst. bot. Univ. Liège.** Archives de l'Institut Botanique de l'Université de Liège. Bruxelles.
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- Arch. Soc. zool.-bot. fenn. Vanamo.** Archivum Societatis Zoologicae Botanicae Fennicae 'Vanamo'. Helsinki.
- Arch. Theecult.** Archief voor de Theecultuur. Surabaja.
- Arh. poljopr. Nauke.** Arhiv za Poljoprivredne Nauke. Beograd.
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- Årsberätt. För. Växtf. Skogstr.** Årstberättelse. Föreningen för Växtförädling av Skogsträd. Stockholm.
- As. Téc. azuc. Cuba Bol. ofic.** Asociación de Técnicos Azucareros de Cuba. Boletín Oficial. Hawana.
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- Ass. amer. Fertil. Contr. Off. Publ.** Association of American Fertilizer Control Officials, Official Publication. Clemson, S. Carolina.
- Atlant. Nat.** Atlantic Naturalist. Washington.
- Atti Accad. Georgof. Firenze.** Atti della R. Accademia dei Georgofili di Firenze. Firenze.
- Atti Accad. Torino.** Atti della R. Accademia delle Scienze. Torino.
- Atti VI Congr. int. Microbiol.** Atti del VI Congresso Internazionale di Microbiologia. Roma.
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- Augsne un Raža.** Riga.
- Aust. Conf. Soil Sci. Adelaide.** Australian Conference in Soil Science. Adelaide.
- Aust. For.** Australian Forestry. Canberra.
- Aust. J. agric. Res.** Australian Journal of Agricultural Research. Melbourne.
- Aust. J. appl. Sci.** Australian Journal of Applied Science. Melbourne.
- Aust. J. biol. Sci.** Australian Journal of Biological Sciences. Melbourne.
- Aust. J. Bot.** Australian Journal of Botany. Melbourne.
- Aust. J. Sci.** Australian Journal of Science. Sydney.
- Aust. J. Zool.** Australian Journal of Zoology. Melbourne.
- Aust. Sug. J.** Australian Sugar Journal. Brisbane.
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- Bact. Rev.** Bacteriological Reviews. Baltimore.
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- Beitr. Mineral. Petrogr. Heidelberg.** Heidelberger Beiträge zur Mineralogie und Petrographie. Berlin.
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- Biochem. Z.** Biochemische Zeitschrift. Berlin.
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- Biokhimiya.** Leningrad.
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- Biol. Zbl.** Biologisches Zentralblatt. Leipzig.
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- Boer en Tuinder.** (Holland).
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- Bol. bibliogr. Minist. Agric. Nac. B. Aires.** Boletín Bibliográfico. Ministerio de Agricultura de la Nación. Buenos Aires.
- Bol. Cent. Document.** Boletín del Centro Documentación Científica y Técnica. México, D.F.
- Bol. Cía Guano Perú.** Boletín de la Compañía Administradora del Guano. Lima, Peru.
- Bol. cult. Guiné portug.** Boletim Cultural da Guiné Portuguesa. Lisboa.
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- Bull. IFAN.** Bulletin. Institut Français d'Afrique Noire. Dakar.
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- Byull. moskov. Obshch. isp'ytat. Prirod'ny Otdel Biol.** Byulleten' Moskovskogo Obshchestva Isp'ytatelei Prirod'y. Otdel Biologicheskii. Moskva.
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Abstr. publ. Pap.
Div. Soils divl. Rep.
Div. Soils, Soils Land Use Ser.
Land Res. Ser.
rur. Res.
Soil Publ.
 Commonwealth Scientific and Industrial Research Organization, Australia. Melbourne.
 Abstracts of Published Papers & Lists of Translations.
 Division of Soils. Divisional Report.
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 Soil Publication.
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- Calif. Citrogr.** California Citrograph. Los Angeles.
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- Canada Dep. Agric. Publ.** Dominion of Canada. Department of Agriculture. Publication. Ottawa.
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- E. afr. agric. J.** East African Agricultural Journal. Nairobi.
- E. Malling Res. Sta. Rep.** East Malling Research Station. Annual Report. Maidstone.

- Eau.** L'Eau. Revue Mensuelle de l'Eau Potable et de l'Assainissement. Paris.
- Ecol. Rev. Sendai.** Ecological Review Tôhoku University. Sendai, Japan.
- Ecology.** Brooklyn.
- Econ. Bot.** Economic Botany. Lancaster, Pa.
- Econ. Geogr.** Economic Geography. Worcester, Mass.
- Edinb. E. Scot. Coll. Agric. Bull. misc. Publ.** Edinburgh and East of Scotland College of Agriculture. Bulletin. Miscellaneous Publications. Edinburgh.
- Edinb. Sch. Agric. tech. Bull.** Edinburgh School of Agriculture. Technical Bulletin. Edinburgh.
- Eesti NSV Teaduste Akad. Toime-tised.**
- Egypt. Cott. Gaz.** Egyptian Cotton Gazette. Alexandria.
- Eire J. Dep. Agric.** Journal of the Department of Agriculture, Eire. Dublin.
- Ekol. pol.** Ekologia Polska. Warszawa.
- Elect. World.** Electrical World (and Engineer). New York.
- Emp. Cott. Gr. Rev.** Empire Cotton Growing Review. London.
- Emp. For. J.** Empire Forestry Journal. London.
- Emp. For. Rev.** Empire Forestry Review. London.
- Emp. J. exp. Agric.** Empire Journal of Experimental Agriculture. Oxford.
- Endeavour.** London.
- Engenh. e Quím.** Engenharia e Química. Rio de Janeiro.
- Ent. Obozrenie.** Entomologicheskoe Obozrenie. Moskva.
- Erdész. Tud. Int. Évk.** Erdészeti Tudományos Intézet. Évkönyve. Budapest.
- Erdő.** Az Erdő. Budapest.
- Erdőmern. Főisk. Évk.** Erdőmérnöki Főiskola Évkönyve (Annales Academiae Disciplinae Silvaticae). Sopron, Hungary.
- Erdőmern. Főisk. Közl.** Erdőmérnöki Főiskola Közleményei. Budapest.
- Ergebn. wiss. Unters. schweiz. Nat. Parks.** Ergebnisse der Wissenschaftlichen Untersuchung des Schweizerischen Nationalparks.
- Estud. inform. Serv. flor. aquíc. Portugal.** Estudos Informacionos dos Servicos Florestais e Aquícolas. Lisboa.
- Europ. Grassl. Conf. Paris.** European Grassland Conference. Paris.
- Exp. Husbandry.** Experimental Husbandry. London.
- Experientia.** Basel.
- Extr. Rapp. Miss. O.E.C.E. Ét. Sols.** Extrait du Rapport de la Mission O.E.C.E. 'Étude des Sols' aux États Unis. Paris.
- FAO.** Food and Agriculture Organization of the United Nations. Rome.
- FAO agric. Developm. Pap., Develop. Pap., For. Developm. Pap.** Food and Agriculture Organization of the United Nations. Agricultural Development Paper. Development Paper. Forestry Development Paper. Rome.
- FAO Plant Prot. Bull.** Food and Agriculture Organization of the United Nations. Plant Protection Bulletin. Rome.
- Fdn sci. Res. Surinam & Netherl. Antilles Publ.** Foundation for Scientific Research in Surinam and the Netherlands Antilles. Publication. Amsterdam.
- Fed. Nigeria Dep. Agric. (Central) Rep.** Federation of Nigeria. Annual Report on the Department of Agriculture (Central). Lagos.
- Fertil. Feed. St. J.** Fertiliser and Feeding Stuffs (and Farm Supplies) Journal. London.
- Fertil. Rev.** Fertilizer Review (National Fertilizer Association). Washington.
- Fertil. Soc. Proc.** Fertiliser Society Proceedings. London.
- Feuilles agric.** Feuilles Agricoles.
- Field Crop Abstr.** Field Crop Abstracts. Aberystwyth.
- Fiji agric. J.** Fiji Department of Agriculture. Agricultural Journal. Suva.
- Fiziol. Rast.** Fiziologiya Rastenii. Moskva.
- Fla agric. Exp. Sta. Bull. Circ.** Florida Agricultural Experiment Station. Bulletin. Circular. Gainesville.
- Fm Chemic.** Farm Chemicals. Philadelphia, Pa.
- Fm Irrig. OEEC.** Farm Irrigation. Organisation for European Economic Co-operation. Paris.
- Fm Mechaniz.** Farm Mechanization. London.
- Fmg S. Afr.** Farming in South Africa. Pretoria.

- Fmr & Stk-Breed.** Farmer and Stock-Breeder and Chamber of Agriculture Journal. London.
- Fmrs Wkly S. Afr.** Farmer's Weekly. Bloemfontein.
- Fol. Biol.** (*formerly*): **Chekhoslov.** Biol. Folia Biologica. (*Formerly*: Chekhoslovetskaya Biologiya.) Praha.
- Föld. Közl.** Földrajzi Közlemények. Budapest.
- Food & Fmg.** Food and Farming. New Delhi.
- Food Res.** Food Research. Champaign, Ill.
- For. Abstr.** Forestry Abstracts. Oxford.
- For. Comm. Bull., Rep., Rep. For. Res., Res. Branch Pap.** Forestry Commission. Bulletin. Report. Report on Forest Research. Research Branch Paper. London.
- For. Prod. Lab. Ore. Bull.** Forest Products Laboratory Oregon. Bulletin. Corvallis.
- For. Res. Notes.** Forest Research Notes. Wellington, N.Z.
- For. Sci.** Forest Science. Washington.
- For. Soils Japan.** Forest Soils of Japan. Tokyo.
- For. Soils Japan Rep.** Forest Soils of Japan. Report. Tokyo.
- Foreign Agric.** Foreign Agriculture. Washington.
- Forestry.** London.
- Formosan mining Industr.** Formosan Mining Industry.
- Forsch. Fortschr. dtsh. Wiss.** Forschungen und Fortschritte. Korrespondenzblatt der Deutschen Wissenschaft und Technik. Berlin.
- Forskn. Fors. Landbr.** Forskning og Forsøk i Landbruket. Oslo.
- Forstw. Cbl.** Forstwirtschaftliches Centralblatt. Hamburg.
- Forstwiss. Zbl.** Forstwissenschaftliches Zentralblatt. Berlin.
- France. Off. Rech. sci. tech. O-M. Publ.** France. Office de la Recherche Scientifique et Technique Outre-Mer. Publication. Paris.
- Frontiers Plant Sci.** Frontiers of Plant Science. New Haven, Conn.
- Fruits.** Paris.
- Fruits d'outre mer.** Paris.
- Fruits Prim. Afr. N.** Fruits et Primeurs de l'Afrique du Nord. Casablanca.
- Fruiteelt.** Arnhem.
- G. agr.** Giornale Agrario. Roma.
- Ga coast. Plain Exp. Sta. Bull.** Georgia. Coastal Plain Experiment Station. Bulletin. Tifton.
- Gambia Dep. Agric. Rep.** Gambia Colony. Report of the Department of Agriculture. Bathurst.
- Garcia de Orta.** Garcia de Orta. Revista da Junta das Missões Geográficas e de Investigações do Ultramar. Lisboa.
- Gartenbauwirtschaft.** Berlin.
- Gartenbauwissenschaft.** Berlin.
- Gartenwelt.** Berlin.
- Gaz. cukrown.** Gazeta Cuckrownicza. Warszawa.
- Gaz. Woda Tech. sanit.** Gaz, Woda i Technika Sanitarna. Warszawa.
- Génie rur.** Génie Rural. Paris.
- Geochim. et cosmochem. Acta.** Geochimica et Cosmochimica Acta. London.
- Geogr. J.** Geographical Journal including the Proceedings of the R. Geographical Society. London.
- Geogr. Rev.** Geographical Review. New York.
- Geography.** London.
- Geol. en Mijnb.** Geologie en Mijnbouw. 's Gravenhage.
- Geol. Jb.** Geologisches Jahrbuch. Hannover.
- Geol. Surv. Nigeria Bull.** Geological Survey of Nigeria. Bulletin. Zaria.
- Gidromet. Pom. narod. Khoz. Tashkent.** Gidrometeorologiya b Pomoshch' narodnomy Khozyaistvy, Tashkent.
- Gidrotekh. Melior.** Gidrotekhnika i Melioratsiya. Moskva.
- Glastech. Ber.** Glastechnische Berichte. Frankfurt.
- Glav. Uprav. Gidrometeorol. Sluzhby, Informats. Sborn.** Glavnoe Upravlenie Gidrometeorologicheskoi Sluzhby, Informatsionyi Sbornik. Leningrad.
- Gold Cst Dep. Soil Land-Use Surv. Bull., Conf. Pap., tech. Rep.** Gold Coast Department of Soil and Land-Use Survey. Bulletin. Conference Paper. Technical Report. Kumasi.
- Gosp. plan.** Gospodarka Planowa. Warszawa.
- Gosp. wodna.** Gospodarka Wodna. Warszawa.
- Gouv. gén. Algérie.** Gouvernement Général de l'Algérie. Alger.
- Govt For. exp. Sta. Meguro.** Government Forestry Experimental Station, Meguro. Report. Tokyo.
- Granja B.Aires.** Granja. Buenos Aires.

- Grassl. Res. Inst. Mem.** Grassland Research Institute Memoir. Hurley, England.
- Grower.** London.
- Grower annu. Fruit Rev.** Grower Annual Fruit Review. London.
- Grundförbättring.** Uppsala.
- Grundl. Landtech.** Grundlage der Landtechnik.
- Hacienda Caracas.** Hacienda. Caracas, Venezuela.
- Hassadeh.** Tel-Aviv.
- Hawaii agric. Exp. Sta. Progr. Notes., tech. Bull.** Hawaii. Agricultural Experiment Station. Progress Notes. Technical Bulletin. Honolulu.
- Hawaii. Plant. Rec.** Hawaiian Planters' Records. Honolulu.
- Heidelberg. Beitr. Min.** Heidelberger Beiträge zur Mineralogie und Petrographie. Berlin & Heidelberg.
- Herb. Abstr.** Herbage Abstracts. Aberystwyth.
- Highw. Res. Bd Bull., Proc.** Highway Research Board. Bulletin. Proceedings of the Annual Meeting. Washington.
- Hilgardia.** Berkeley, Calif.
- Hojas Direcc. gen. Agric. Madr.** Hojas Divulgadoras. Direccion General de Agricultura. Madrid.
- Hokkaido nat. agric. Exp. Sta. Res. Bull., Soil Surv. Rep.** Hokkaido National Agricultural Experiment Station. Research Bulletin. Soil Survey Report. Kotoni, Sapporo, Japan.
- Holzforschung.** Berlin.
- Hopfenrundschau.**
- Houille blanche.** Grenoble.
- Hung. agric. Rev.** Hungarian Agricultural Review. Budapest.
- Idia.** Buenos Aires.
- Időjárás.** Budapest.
- Il Riso.** Milano.
- Ilanoth.** (Forest Research Station.) Ilanoth.
- Ill. agric. Exp. Sta. Bull.** Illinois University. Agricultural Experiment Station. Bulletin. Urbana.
- Imp. Coll. trop. Agric. Rep. Cacao Res.** Imperial College of Tropical Agriculture. Report on Cacao Research. St. Augustine, Trinidad.
- Imp. For. Inst. Pap.** Imperial Forestry Institute. Paper. Oxford.
- Indian cent. Cott. Cttee. Conf.** Indian Central Cotton Committee Conference. Bombay.
- Indian cent. Jute Cttee. agric. Res. Mem.** Indian Central Jute Committee, Agricultural Research. Memoir. Calcutta.
- Indian Cocon. J.** Indian Coconut Journal. Ernakulam.
- Indian Cott. Gr. Rev.** Indian Cotton Growing Review. Bombay.
- Indian Coun. agric. Res. Bull.** Indian Council of Agricultural Research. Bulletin. New Delhi.
- Indian Fmg.** Indian Farming. Delhi.
- Indian For.** Indian Forester. Dehra Dun.
- Indian Inst. Sug. Tech. Kanpur.** Indian Institute of Sugar Technology. Kanpur.
- Indian J. agric. Sci.** Indian Journal of Agricultural Science. Delhi.
- Indian J. Hort.** Indian Journal of Horticulture. Sabour.
- Indian Phytopath.** Indian Phytopathology. New Delhi.
- Indian Tob.** Indian Tobacco. Egmore, Madras.
- Industr. agric.** Industries Agricoles et Alimentaires. Paris.
- Industr. chim. Belge.** Industrie Chimique belge. Bruxelles.
- Industr. chim. Paris.** Industrie Chimique. Paris.
- Industr. engng Chem.** Industrial and Engineering Chemistry. Easton, Pa.
- Industr. Parfum.** Industrie de la Parfumerie. Paris.
- Industr. saccar. ital.** Industria Saccarifera Italiana. Genova.
- Inf. Estac. agríc. La Molina.** Informe. Estación Experimental Agrícola de La Molina. Lima.
- Informac. geogr. Chile.** Informaciones Geográficas. Santiago de Chile.
- Informac. quím. Anal. Madr.** Información de Química Analítica (Madrid). Madrid.
- Informac. téc.** Información Técnica. Bogotá.
- Ingen. agron.** Ingeniería Agronómica. Buenos Aires.
- Ingen. hidr. Méx.** Ingeniería Hidráulica en México. México.
- Ingenieur 's Grav.** Ingenieur. 's Gravenhage.
- Inst. Bdenkart. dtsch. demokr. Republ.** Institut für Bodenkartierung. Ministerium für Land und Forstwirtschaft der Deutschen Demokratischen Republik. Leipzig.

- Inst. for. Invest. Exp. Madr. Bol.** Instituto Forestal de Investigaciones y Experiencias. Boletín. Madrid.
- Inst. Fruits Agrumes colon. Ann.** Institut des Fruits et Agrumes Coloniaux. Annales. Fouta Djallon, Fr. Guin.
- Inst. interamer. Cienc. agríc.** Instituto Interamericano de Ciencias Agrícolas. Turrialba, Costa Rica.
- Inst. nat. Ét. agron. Conge Belge.** Institut National pour l'Étude Agronomique du Congo Belge. Bruxelles.
- Inst. Rech. Caoutch. Indoch. Op. tech.** Institut des Recherches sur le Caoutchouc en Indochine. Opuscule Technique. Laikhê, Indochina.
- Inst. Seaweed Res. Rep.** Institute of Seaweed Research. Report. Inveresk, Midlothian.
- Inst. Suelos Agrotéc. Publ.** Instituto de Suelos y Agrotécnia, Publicación. Buenos Aires.
- Int. bot. Congr. Rep.** International Botanical Congress. Reports. Paris.
- Int. Comm. Irrig. Drain. ann. Bull.** International Commission on Irrigation and Drainage. Annual Bulletin.
- Int. Peat Symp. Dubl.** International Peat Symposium. Dublin.
- Int. Rice Comm. News Lett., Rep.** International Rice Commission (FAO). News Letter. Report. Rome.
- Inst. roy. Mét. Mem.** Mémoires de l'Institut Royal Météorologique de Belgique. Bruxelles.
- Int. Sug. J.** International Sugar Journal. Manchester.
- Invest. zool. chil.** Investigaciones Zoológicas Chilenas. Santiago.
- Iowa agric. Exp. Sta. Res. Bull.** Agricultural Experiment Station. Agricultural Extension Service Iowa State College. Research Bulletin. Ames.
- Iowa St. Coll. J. Sci.** Iowa State College Journal of Science. Ames.
- Irish Nat. J.** Irish Naturalists' Journal. Belfast.
- Irrig. Pioggia.** Irrigazione a Pioggia. Bologna.
- Irrig. & Pwr.** Irrigation and Power. Simla.
- Irrig. Rés. Inst. tech. Mem.** Irrigation Research Institute. Technical Memorandum. Roorkee, Uttar Pradesh.
- Israel Explor. J.** Israel Exploration Journal. Jerusalem.
- Israel Met. Serv. misc. Pap.** Miscellaneous Papers. Meteorological Service, Israel.
- Ist. Pat. veg. Univ. Pisa Boll.** Istituto di Patologia Vegetale, Università Pisa. Bollettino. Pisa.
- Ital. agric.** Italia Agricola. Roma.
- Ital. for. mont.** Italia Forestale e Montana. Firenze.
- Izv. Akad. Nauk.** Izvestiya Akademii Nauk SSSR. Moskva.
- Izv. Akad. Nauk armyan. SSR Ser. biol. s.-kh. Nauki.** Izvestiya Akademii Nauk Armyanskoï S.S.R., Seriya Biologicheskie i sel'sko-khozyaistvennye Nauki. Erevan.
- Izv. Akad. Nauk azerbaidzhan. SSR.** Izvestiya Akademii Nauk Azerbaidzhanskoï S.S.R.
- Izv. Akad. Nauk belorus. SSR.** Izvestiya Akademii Nauk Belorusskoï S.S.R. Minsk.
- Izv. Akad. Nauk kazakh. Ser. khim.** Izvestiya Akademii Nauk Kazakhskoi S.S.R. Seriya Khimicheskaya. Alma-Ata, Kazakh SSR.
- Izv. Akad. Nauk Ser. biol.** Izvestiya Akademii Nauk SSSR. Seriya Biologicheskaya. Moskva.
- Izv. Akad. Nauk Ser. geofiz.** Izvestiya Akademii Nauk SSSR. Seriya Geofizicheskaya. Moskva.
- Izv. Akad. Nauk Ser. geogr.** Izvestiya Akademii Nauk SSSR. Seriya Geograficheskaya. Moskva.
- Izv. Akad. Nauk Ser. geol.** Izvestiya Akademii Nauk SSSR. Seriya Geologicheskaya. Moskva.
- Izv. Akad. Nauk turkmen. SSR.** Izvestiya Akademii Nauk Turkmeniskoï S.S.R. Ashkhabad.
- Izv. Akad. Nauk uzbek. SSR.** Izvestiya Akademii Nauk Uzbekskoï S.S.R. Tashkent.
- Izv. estestv.-nauch. Inst.** Izvestiya Estestvennogo-nauchnogo Instituta Imeni P.F. Lesgafta.
- Izv. estestv.-nauch. Inst. moltov. Univ.** Izvestiya Estestvennogo-nauchnogo Instituta Molotovskogo Universiteta.
- Izv. kazan. Fil. Akad. Nauk Ser. biol. Nauk.** Izvestiya Kazanskogo Filiala Akademii Nauk SSSR, Seriya Biologicheskikh Nauk.
- Izv. kirgiz. Fil. Akad. Nauk.** Izvestiya Kirgizskogo Filiala Akademii Nauk S.S.S.R. Frunze.
- Izv. kuibyshev. inzh.-melior. Inst.** Izvestiya Kuibyshevskogo Inzhenerno-meliorativnogo Instituta.

- Izv. moldav. Fil. Akad. Nauk.** Izvestiya Moldavskogo Filiala Akademii Nauk S.S.S.R. Kishinev.
- Izv. Otd. estestv. Nauk Akad. Nauk tadzhik. SSR.** Izvestiya Otdeleniya Estestvennykh Nauk Akademii Nauk Tadzhikskoi S.S.R. - Stalinabad.
- Izv. pochv. Inst. Sofia.** Izvestiya na Pochveniia Institut. Sofia.
- Izv. timiryazev. s.-kh. Akad.** Izvestiya Timiryazevskoi selskokhozyaistvennoi Akademii. Moskva.
- J. agric. Ass. China.** Journal. Agricultural Association of China. Taipei, Taiwan.
- J. agric. chem. Soc. Japan.** Journal of the Agricultural Chemical Society of Japan. Tokyo.
- J. agric. Club Univ. Reading.** Journal of the Agricultural Club of the University of Reading. Reading.
- J. agric. Engng Res.** Journal of Agricultural Engineering Research. Silsoe.
- J. agric. Engng Soc. Japan.** Journal of the Agricultural Engineering Society of Japan. Tokyo.
- J. agric. Food Chem.** Journal of Agricultural and Food Chemistry. Easton, Pa.
- J. agric. Met. Tokyo.** Journal of Agricultural Meteorology. Tokyo.
- J. agric. Sci.** Journal of Agricultural Science. Cambridge.
- J. agric. Soc. Trin. Tob.** Journal of the Agricultural Society of Trinidad and Tobago. Port of Spain.
- J. agric. Soc. Univ. Coll. Wales.** Journal of the Agricultural Society, University College of Wales. Aberystwyth.
- J. Agric. trop. (Formerly: Rev. int. Bot. appl.)** Journal d'Agriculture Tropicale et de Botanique Appliquée. Paris.
- J. Agric. Univ. Puerto Rico.** Journal of Agriculture of the University of Puerto Rico. Rio Piedras.
- J. Agric. Vict. (Formerly: J. Dep. Agric. Vict.)** Journal of Agriculture. Victorian Department of Agriculture. Melbourne.
- J. Agric. W. Aust.** Journal of Agriculture of Western Australia. Perth.
- J. Air Pollution Control Ass.** Journal of the Air Pollution Control Association. Wilmerding, Pa.
- J. amer. chem. Soc.** Journal of the American Chemical Society. Easton, Pa.
- J. amer. diet. Ass.** Journal of the American Dietetic Association. Baltimore.
- J. Anim. Ecol.** Journal of Animal Ecology. Cambridge.
- J. Anim. Sci.** Journal of Animal Science. Menasha.
- J. appl. Chem.** Journal of Applied Chemistry. London.
- J. Ass. off. agric. Chem. Wash.** Journal of the Association of Official Agricultural Chemists. Washington.
- J. aust. Inst. agric. Sci.** Journal of the Australian Institute of Agricultural Science. Sydney.
- J. Bact.** Journal of Bacteriology. Baltimore.
- J. biol. Chem.** Journal of Biological Chemistry. Baltimore.
- J. brit. Grassl. Soc.** Journal of the British Grassland Society. Aberystwyth.
- J. chem. Soc. Japan.** Journal of the Chemical Society of Japan. Tokyo.
- J. Colloid Sci.** Journal of Colloid Science. New York.
- J. comp. Path.** Journal of Comparative Pathology and Therapeutics. Edinburgh-London-Croydon.
- J. Dairy Sci.** Journal of Dairy Science. Baltimore, Lancaster, Pa.
- J. Dep. Agric. Dubl.** Journal Department of Agriculture. Dublin.
- J. Dep. Agric. S. Aust.** Journal of the Department of Agriculture of South Australia. Adelaide.
- J. Dep. Agric. Vict. (Now: J. Agric. Vict.)** Journal of the Department of Agriculture of Victoria, Australia. Melbourne.
- J. Dep. Agric. W. Aust.** Journal of the Department of Agriculture for Western Australia. Perth.
- J. Earth Sci. Nagoya Univ.** Journal of Earth Sciences. Nagoya University. Nagoya.
- J. Ecol.** Journal of Ecology. London.
- J. econ. Ent.** Journal of Economic Entomology. Geneva, N.Y.
- J. electrochem. Soc. Japan.** Journal of the Electrochemical Society of Japan. Tokyo.
- J. exp. Biol.** Journal of Experimental Biology. Cambridge.
- J. exp. Bot.** Journal of Experimental Botany. Oxford.
- J. Fac. Agric. Iwate Univ.** Journal of the Faculty of Agriculture, Iwate University. Morioka, Japan.
- J. Fac. Agric. Kyushu Univ.** Journal of the Faculty of Agriculture. Kyushu University. Kyushu, Japan.

BIBLIOGRAPHY OF SOIL SCIENCE

- J. Fac. Fish. Anim. Husb. Hiroshima.** Journal of the Faculty of Fisheries and Animal Husbandry. Hiroshima University. Fukuyama.
- J. Fmrs' Cl. Lond.** Journal of the Farmers' Club. London.
- J. For.** Journal of Forestry. Washington.
- J. gen. Microbiol.** Journal of General Microbiology. Cambridge.
- J. Geol.** Journal of Geology. Chicago.
- J. Helminth.** Journal of Helminthology. London.
- J. hort. Ass. Japan.** Journal of the Horticultural Association of Japan. Tokyo.
- J. hort. Sci.** Journal of Horticultural Sciences. London.
- J. Indian Bot.** Journal of Indian Botany. Madras.
- J. Indian bot. Soc.** Journal of the Indian Botanical Society. Madras.
- J. Indian chem. Soc.** Journal of the Indian Chemical Society. Calcutta.
- J. Indian Roads Congr.** Journal of the Indian Roads Congress.
- J. Indian Soc. Soil Sci.** Journal of the Indian Society of Soil Science. New Delhi.
- J. Inst. brit. agric. Engrs.** Journal of the Institute of British Agricultural Engineers. London.
- J. Inst. Corn agric. Merch.** Journal of the Institute of Corn and Agricultural Merchants, Ltd. London.
- J. Instn brit. agric. Engrs.** Journal of the Institution of British Agricultural Engineers. London.
- J. Instn Engrs Aust.** Journal of the Institution of Engineers of Australia. Sydney.
- J. Jamaica agric. Soc.** Journal of the Jamaica Agricultural Society. Kingston.
- J. jap. For. Soc.** Journal of the Japanese Forestry Society. Tokyo.
- J. Kanto-Tosan agric. Exp. Sta.** Journal of the Kanto-Tosan Agricultural Experiment Station. Konosu, Saitama, Japan.
- J. King's Coll. agric. Soc.** Journal of the King's College Agricultural Society. Durham.
- J. Land Agents Soc.** Journal of the Land Agents' Society. London.
- J. Madras Univ.** Journal of the Madras University. Madras.
- J. Nutr.** Journal of Nutrition. Baltimore.
- J. Proc. Inst. Sewage Purif.** Journal and Proceedings of the Institute for Sewage Purification. Kew, England.
- J. Proc. Instn Chem. (India).** Journal and Proceedings of the Institution of Chemists (India). Calcutta.
- J. Range Mgmt.** Journal of Range Management. Portland, Ore.
- J. roy. agric. Soc.** Journal of the Royal Agricultural Society (of England). London.
- J. roy. hort. Soc.** Journal of the Royal Horticultural Society. London.
- J. roy. Soc. Arts.** Journal of the Royal Society of Arts. London.
- J. roy. Soc. N.S.W.** Journal and Proceedings of the Royal Society of New South Wales. Sydney.
- J. roy. Soc. W. Aust.** Journal and Proceedings of the Royal Society of Western Australia. Perth.
- J. Rubb. Res. Inst. Malaya.** Journal of the Rubber Research Institute of Malaya. Kuala Lumpur.
- J. S.afr. chem. Inst.** Journal of the South African Chemical Institute. Cape Town. Johannesburg.
- J. Sci. Food Agric.** Journal of the Science of Food and Agriculture. London.
- J. sci. industr. Res.** Journal of Scientific and Industrial Research. Delhi.
- J. sci. Res. Benares Hindu Univ.** Journal of Scientific Research of the Benares Hindu University.
- J. Sci. Soil Tokyo.** Journal of the Science of Soil and Manure. Tokyo.
- J. sediment. Petrol.** Journal of Sedimentary Petrology. Tulsa, Okla.
- J. Soil Conserv. N.S.W.** Journal of the Soil Conservation Service of New South Wales. Sydney.
- J. Soil Sci.** Journal of Soil Science. Oxford.
- J. Soil Sci. Soc. Philipp.** Journal of the Soil Science Society of the Philippines. Manila.
- J. Soil Wat. Conserv.** Journal of Soil and Water Conservation. Baltimore.
- J. Soil Wat. Conserv. India.** Journal of Soil & Water Conservation in India. Hazaribagh.
- J. Sports Turf Res. Inst.** Journal of the Sports Turf Research Institute. Bingley.
- J. Univ. Bombay.** Journal of the University of Bombay.
- J. W.afr. Inst. Oil Palm Res.** Journal of the West African Institute of Oil Palm Research. Benin.
- J. W. afr. Sci. Ass.** Journal of the West African Science Association. Achimota, Ghana.

- J. Wash. Acad. Sci.** Journal of the Washington Academy of Sciences. Washington.
- Jaarb. nat. Com. Brouwg.** Jaarboekje van het Nationaal Comité voor Brouwerij. Wageningen.
- Jaarb. Proefsta. Boomkwek. Boskoop.** Jaarboek Proefstation Boomkwekerij Boskoop.
- Jamaica Dep. Agric. Ext. Circ.** Department of Agriculture Jamaica, B.W.I. Extension Circular.
- Jap. Govt Minist. Agric. For.** Ministry of Agriculture and Forestry Japanese Government. Tokyo.
- Japan Analyst.** Tokyo.
- Japan Sci. Rev. biol. Sci.** Japan Science Review. Biological Sciences Series. Tokyo.
- Jb. LandesAnst. Qualif. landw. Prod. Bp.** Jahrbuch der Landesanstalt für Qualifikation Landwirtschaftlicher Produkte. Budapest.
- Jealott's Hill Bull.** Jealott's Hill Agricultural Research Bulletin. Bracknell.
- Johns Hopk. Univ. Publ. Climat.** Johns Hopkins University. Laboratory of Climatology, Publications in Climatology. Baltimore.
- John Innes Leaflet.** John Innes Leaflet. London.
- Jordbunnsbeskr. Stat. Jordundersøk. Norg. LandbrHøgsk.** Jordbunnsbeskrivelse. Statens Jordundersøkelse, Norges Landbrukshøgskule. Oslo.
- Jugoslav. Društvo Prouč. Zemlj.** Jugoslovensko Društvo za Proučavanje Zemljišta. Beograd.
- Jute Bull.** Jute Bulletin. Calcutta.
- K. LantbrAkad. Tidskr.** Kongliga Lantbruksakademiens (Handlingar och) Tidskrift. Stockholm.
- K. LantbrHögsk. Ann.** Kungliga Lantbrukshögskolans Annaler. Uppsala.
- K. Skogshögsk. Skr.** Kongliga Skogshögskolans Skrifter. Stockholm.
- K. VetHøjsk. Aarsskr.** Kongelige Veterinaer- og Landbohøjskoles Aarsskrift. Kjøbenhavn.
- Kali u. Steinsalz.** Kali und Steinsalz. Essen, Germany.
- Kalium u. Magnesium.** Kalium und Magnesium.
- Kalk.** Kalk. Voorlichtingsblad van de Stichting Nederlands Landbouw Kalk Bureau. Zwolle.
- Kans. agric. Exp. Sta. Bull. Circ. Rep.** Agricultural Experiment Station. Kansas State College of Agriculture and Applied Science. Bulletin. Circular. Report. Manhattan.
- Kartoffelbau.** Hamburg.
- Kenya Dep. Agric. Rep.** Colony and Protectorate of Kenya. Department of Agriculture. Annual Report. Nairobi.
- Khim. Prom.** Khimicheskaya Promyshlennost. Berlin.
- Khlopkovodstvo.** Moskva.
- Kieler Milchwirtsch. ForschBer.** Kieler Milchwirtschaftliche Forschungsberichte. Hildesheim, Germany.
- Kolkhoznik Belorussii.**
- Kolloid. Zh.** Kolloidnyi Zhurnal. Moskva.
- Kolloidz.** Kolloidzeitschrift. Dresden.
- Kora Vyvetrivaniya.** Moskva.
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- Proc. nat. Acad. Sci. India.** Proceedings of the National Academy of Sciences, India. Allahabad.
- Proc. nat. Comm. Fertil. Appl.** Proceedings of the National Joint Committee on Fertilizer Application. Washington.
- Proc. nat. Inst. Sci. India.** Proceedings of the National Institute of Sciences of India. Calcutta.
- Proc. ninth ann. Res. Conf. Calif. Fig Inst.** Proceedings of the Ninth Annual Research Conference of the Californian Fig Institute.
- Proc. ninth Meet. Crops Soils Bd Agric. India.** Proceedings of the Ninth Meeting of the Crops and Soils Wing, Board of Agriculture & Animal Husbandry in India. Delhi.
- Proc. Ohio hort. Soc.** Proceedings. Ohio State Horticultural Society. Columbus.
- Proc. Okla Acad. Sci.** Proceedings of the Oklahoma Academy of Science. Stillwater.
- Proc. Pa Acad. Sci.** Proceedings of the Pennsylvania Academy of Science. Harrisburg.
- Proc. Qd Soc. Sug. Cane Tech.** Proceedings of the Queensland Society of Sugar Cane Technologists. Mackay.
- Proc. Rio Grande Valley hort. Inst.** Proceedings of the Rio Grande Valley Horticultural Institute. Weslaco, Texas.
- Proc. roy. Soc.** Proceedings of the Royal Society. London.
- Proc. second inter-afr. Soils Conf.** Proceedings of the Second Inter-african Soils Conference. Brussels.
- Proc. second Radio-isotope Conf.** Proceedings. Second Radio-isotope Conference. Oxford.
- Proc. sixth int. Grassl. Congr.** Proceedings of the Sixth International Grassland Congress. State College, Pa.
- Proc. sixth Meet. east Sect. nat. Weed Cttee.** Proceedings of the Meeting, Eastern Section, National Weed Committee. Ottawa.
- Proc. sth. Weed Conf.** Proceedings of the Southern Weed Conference.
- Proc. Symp. sci. Probl. Land Use arid Rég. Cairo.** Proceedings of the Symposium on Scientific Problems of Land Use in Arid Regions, Cairo. Heliopolis.
- Proc. third int. Soil Mech. Conf.** Proceedings of the Third International Conference on Soil Mechanics and Foundation Engineering.
- Proc. 30th ann. Meet. nat. Comm. Fertil. Appl.** Proceedings of the Thirtieth Annual Meeting of the National Joint Committee on Fertilizer Application. Washington.
- Proc. 31st ann. Meet. nat. Comm. Fertil. Appl.** Proceedings of the Thirty-first Annual Meeting of the National Joint Committee on Fertilizer Application. Washington.
- Proc. 39th Indian Sci. Congr.** Proceedings of the Thirty-ninth Indian Science Congress. Calcutta.
- Proc. 29th Congr. S. afr. Sug. Tech. Ass.** Proceedings of the Twenty-ninth Annual Congress of the South African Sugar Technologists' Association. Mount Edgecombe, Natal.

- Proc. Wash. St. hort. Ass.** Proceedings of the Washington State Horticultural Association. Washington.
- Przegl. geod.** Przegląd Geodozyjny.
- Przegl. geogr.** Przegląd Geograficzny. Warszawa.
- Przem. chem.** Przemysł Chemiczny. Warszawa.
- Pubbl. Univ. cattolica S. Cuore.** Pubblicazioni dell'Università Cattolica del S. Cuore, Annali della Facoltà di Agraria. Milano.
- Publ. Inst. nat. agron. Congo Belge Sér. sci.** Publications de l'Institut National pour l'Étude Agronomique du Congo Belge. Série Scientifique. Bruxelles.
- Publ. Minist. Viac. publ. Bras.** Publicações do Ministerio de Viação e Obras Publicas do Brasil. Rio de Janeiro.
- Publ. Rds Wash.** Public Roads (U.S. Department of Agriculture). Washington.
- Publ. Sci. Comm. fr. Polar Exped.** Publication of the Scientific Commission for the French Polar Expeditions. Paris.
- Publ. tech. Inst. Belge Amélior. Better.** Publications Techniques de l'Institut Belge pour l'Amélioration de la Betterave. Tirlemont.
- Puerto Rico agric. Exp. Sta. Bull. tech. Pap.** University of Puerto Rico Agricultural Experiment Station. Bulletin. Technical Paper. Rio Piedras.
- Punjab Fmr.** Punjab Farmer. Lahore.
- Pustyni USSR i ikh Osvoenie.**
- Pwr Fmg Aust.** Power Farming in Australia and New Zealand. Sydney.
- Pwr Fmr Dubl.** Power Farmer, Britain and Overseas. Dublin.
- Qd agric. J.** Queensland Agricultural Journal. Brisbane.
- Qd Dep. Agric. and Stock.** Queensland Department of Agriculture and Stock. Brisbane.
- Quad. Nutr.** Quaderni della Nutrizione. Bologna.
- Quart. J. Fla Acad. Sci.** Quarterly Journal. Florida Academy of Sciences. Gainesville.
- Quart. J. For.** Quarterly Journal of Forestry. London.
- Quart. J. geol. Soc. India.** Quarterly Journal of the Geological, Mining and Metallurgical Society of India. Calcutta.
- Quart. J. roy. met. Soc.** Quarterly Journal of the Royal Meteorological Society. London.
- Quebec Minist. Agric. Bull. Bull. tech.** Ministère de l'Agriculture de la Province de Québec. Service de l'Horticulture. Bulletin. Bulletin Technique. Québec.
- Quim e Industr. S. Paulo.** Química e Industria. São Paulo.
- R.C. Semin. Sci. Cagliari.** Rendiconti del Seminario della Facoltà di Scienze della R. Università di Cagliari.
- R.R.I. Plant. Bull.** (See also: Plant. Bull. Rubb. Res. Inst. Malaya). Planters' Bulletin of the Rubber Research Institute of Malaya. Kuala Lumpur.
- Rad. Poljopr. Fak. Univ. Sarajevu.** Radovi Poljoprivredno Sumarskog Fakulteta Univerziteta U Sarajevu. Sarajevo.
- Radioisotope Conf.** Radioisotope Conference. London.
- Rec. geol. Surv. Tanganyika.** Records of the Geological Survey of Tanganyika Territory. Dar es Salaam.
- Rec. geol. Surv. Uganda.** Records of the Geological Survey Department Uganda. Entebbe.
- Rec. Res. Fac. Agric. Tokyo.** Records of Researches in the Faculty of Agriculture, University of Tokyo. Tokyo.
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- Rubb. Res. Inst. Ceylon adv. Circ., Bull., quart. Circ.** Rubber Research Institute of Ceylon. Advisory Circular. Bulletin. Quarterly Circular. Colombo.
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- Sborn. Trud. leningr. gidromet. Inst.** Sbornik Trudov Leningradskogo Gidrometricheskogo Instituta. Leningrad.
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- SchrReihe ForschAnst. Landw. Braunschweig-Völkenrode.** Schriftenreihe der Forschungsanstalt für Landwirtschaft Braunschweig-Völkenrode. Hannover.
- Schweiz. landw. Mh.** Schweizerische Landwirtschaftliche Monatshefte. Bern-Bümpliz.
- Schweiz. landw. Z.** Schweizerische Landwirtschaftliche Zeitschrift. Zürich.
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- Schweiz. Z. Obst u. Weinb.** Schweizerische Zeitschrift für Obst- und Weinbau. Frauenfeld, Wädenswil.
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- Sci. Hort.** Scientific Horticulture. Wye.
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- Soobshch. dal'nevost. Fil. Akad. Nauk.** Soobshcheniya Dal'nevostochnogo Filiala Akademii Nauk S.S.S.R. Vladivostok.
- Soobshch. Inst. Lesa Akad. Nauk.** Soobshcheniya Instituta Lesa Akademii Nauk S.S.S.R. Moskva.
- Sotsial. sel. Khoz.** Sotsialisticheskoe Sel'skoe Khozyaistvo. Moskva.
- Sotsial. sel. Khoz. Azerbaïdzhana.** Sotsialisticheskoe Sel'skoe Khozyaistvo Azerbaïdzhana. Baku.
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- Sovkhoz. Proizvod.** Sovkhoznoe Proizvodstvo.
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- Tijdschr. PIZiekt.** Tijdschrift over Plantenziekten. Wageningen.
- Tob. Res. Bd Rhod. Nyasaland.** Tobacco Research Board of Rhodesia and Nyasaland. Salisbury.
- Tôhoku J. agric. Res.** Tôhoku Journal of Agricultural Research. Sendai, Japan.
- Torfnachrichten.** Mitteilungsblatt der Torfforschung, G.m.b.H. Bad Zwischenahn, Germany.

- Torfyanaia Prom.** Torfyanaia Promyshlennosty. Moskva.
- Trab. Cent. Invest. algod. Lourenço Marq.** Trabalhos de Centro de Investigação Científica Algodoeira. Lourenço Marques.
- Trans. amer. Fish. Soc.** Transactions of the American Fisheries Society. New York.
- Trans. amer. geophys. Un.** Transactions. American Geophysical Union. Washington.
- Trans. amer. Inst. min. (metall.) Engrs.** Transactions of the American Institute of Mining (and Metallurgical) Engineers. New York.
- Trans. brit. mycol. Soc.** Transactions of the British Mycological Society. London.
- Trans. Faraday Soc.** Transactions of the Faraday Society. London.
- Trans. fifth int. Congr. Soil Sci.** Fifth International Congress of Soil Science. Transactions. Brussels.
- Trans. Ill. hort. Soc.** Transactions of the Illinois State Horticultural Society. Springfield.
- Trans. Instn Min. Metall. Lond.** Transactions of the Institution of Mining and Metallurgy. London.
- Trans. int. Soc. Soil Sci. Comm.** Transactions of the International Society of Soil Science. Commission. Dublin.
- Trans. Kans. Acad. Sci.** Transactions of the Kansas Academy of Science. Topeka.
- Trans. roy. Soc. N.Z.** Transactions and Proceedings of the Royal Society of New Zealand. Dunedin.
- Trans. roy. Soc. S. Aust.** Transactions of the Royal Society of South Australia. Adelaide.
- Trans. Wis. Acad. Sci. Arts Lett.** Transactions of the Wisconsin Academy of Sciences, Arts and Letters. Madison.
- Trop. Agric. Trin.** Tropical Agriculture. The Journal of the Imperial College of Agriculture. Trinidad.
- Trop. Agriculturist.** Tropical Agriculturist and Magazine of the Ceylon Agricultural Society. Paradeniya.
- Trudý azerbaïdshan. Univ. Ser. biol.** Trudý Azerbaïdzhanskogo Universiteta. Seriya Biologicheskaya. Baku.
- Trudý bashkir. s.-kh. Inst.** Trudý Bashkirskogo Sel'sko-Khozyaistvennogo Instituta. Ufa.
- Trudý belorus. s.-kh. Akad.** Trudý Belorusskoï Sel'sko-Khozyaistvennoï Akademii. Gorki.
- Trudý bot. Inst. Akad. Nauk.** Trudý Botanicheskogo Instituta im. V. L. Komarova. Izdatel'stvo Akademii Nauk S.S.S.R. Moskva-Leningrad.
- Trudý dagestan. s.-kh. Inst.** Trudý Dagestanskogo Sel'sko-Khozyaistvennogo Instituta. Makhachkala.
- Trudý gidrol. Inst.** Trudý Gidrologicheskogo Instituta. Leningrad.
- Trudý glav. geofiz. Observ.** Trudý Glavnoï Geofizicheskoi Observatorii. Leningrad.
- Trudý grodn. s.-kh. Inst.** Trudý Grodnenskogo Sel'sko-Khozyaistvennogo Instituta. Minsk.
- Trudý Inst. Biol. Akad. Nauk turkmen. SSR.** Trudý Instituta Biologii Akademii Nauk Turkmenskoi S.S.R. Ashkhabats.
- Trudý Inst. Biol. ural. Fil. Akad. Nauk.** Trudý Instituta Biologii Ural'skogo Filiala Akademii Nauk S.S.S.R. Moskva.
- Trudý Inst. Fiziol. Rast. Timiryazeva.** Trudý Instituta Fiziologii Rastenii Imeni K. A. Timiryazeva Akademii Nauk S.S.S.R. Moskva.
- Trudý Inst. Geogr. Akad. Nauk.** Trudý Instituta Geografii Akademii Nauk S.S.S.R. Moskva.
- Trudý Inst. Lesa Akad. Nauk.** Trudý Instituta Lesa Akademii Nauk. Moskva.
- Trudý Inst. Melior. vodn. bolotn. Khoz. Akad. Nauk belorus. SSR.** Trudý Instituta Melioratsii Vodnogo i Bolotnogo Khozyaistva Akademii Nauk Belorusskoï S.S.R. Minsk.
- Trudý Inst. Mikrobiol. Akad. Nauk.** Trudý Instituta Mikrobiologii Akademii Nauk S.S.S.R. Moskva.
- Trudý Inst. Pochvoved. Agrokhim. (Akad. Nauk Azerbaïdzhan. SSR.)** Trudý Instituta Pochvovedeniya i Agrokhimii Akademii Nauk Azerbaïdzhanskoi. Baku.
- Trudý Inst. Pochvoved. Akad. Nauk gruzin. SSR.** Trudý Instituta Pochvovedeniya Akademii Nauk Gruzinskoi S.S.R.
- Trudý Inst. Zemled. kazakhsk. Fil. Akad. s.-kh. Nauk.** Trudý Instituta Zemledeliya Imeni Akademika V. R. Vil'yamsa Vsesoyuznoi Akademii Nauk Imeni Lenina Kazakhskii Filial. Alma-Ata.

- Trudŷ kazakh. gidrometeorol. Inst.** Trudŷ Kazakhskogo Nauchno-Issledovatel'skogo Gidrometeorologicheskogo Instituta. Leningrad.
- Trudŷ kirgiz. s.-kh. Inst.** Trudŷ Kirgizskogo Sel'sko-Khozyaistvennogo Instituta. Frunze.
- Trudŷ kirov. s.-kh. Inst.** Trudŷ Kirovskogo Sel'sko-Khozyaistvennogo Instituta. Kirov.
- Trudŷ kishinev. s.-kh. Inst.** Trudŷ Kishinevskogo Sel'sko-Khozyaistvennogo Instituta imeni M. V. Frunze.
- Trudŷ Konf. Mikotrof. Rast. Moskva.** Trudŷ Konferentsii Mikotroficheskikh Rastenii. Moskva.
- Trudŷ Konf. Vop. pochv. Mikrobiol. Akad. Nauk, Inst. Mikrobiol.** Trudŷ Konferentsii Voprosov Pochvennoi Mikrobiologii Akademii Nauk, Institut Mikrobiologii.
- Trudŷ lesn. Khoz. zapad. Sibiri.** Trudŷ po Lesnomu Khozyaistvu Zapadnyĭ Sibiri.
- Trudŷ nauch.-tekh. Soveshch. Zashch. Truboprovod. Kabel. Korroz.** Trudŷ Nauchnogo-Tekhnicheskogo Soveshchaniya po Zashchite Truboprovodov i Kabelei ot Korrozii.
- Trudŷ Otd. Pochvoved. kazakhsk. Fil. Akad. Nauk.** Trudŷ Otdela Pochvovedeniya Kazakhskogo Filiala Akademii Nauk S.S.S.R. Kazan.
- Trudŷ Otd. Pochvoved. kirgiz. Fil. Akad. Nauk.** Trudŷ Otdela Pochvovedeniya Kirgizskogo Filiala Akademii Nauk S.S.S.R. Frunze.
- Trudŷ pochv. Inst. Dokuchaeva.** Trudŷ Pochvennogo Instituta Imeni V. V. Dokuchaeva, Akademii Nauk S.S.S.R. Moskva-Leningrad.
- Trudŷ 6 Sessii Akad. Nauk turkmen. SSR. Vopr. Bor'b Zasolen. Pochv.** Trudŷ 6-i Sessii Akademii Nauk Turkmennoi S.S.R. Posvyashch. Voprosam Bor'bŷ s Zaseleniem Pochv v Tselyakh Povŷsheniya Urozhainosti s.-kh. Kul'tur. Ashkhabad.
- Trudŷ solikam. s.-kh. opyt. Stants.** Trudŷ Solikamskoĭ Sel'sko-Khozyaistvennoi Opytnoi Stantsii. Molotov.
- Trudŷ sredneaziat. Univ. khim. Nauki.** Trudŷ Sredneaziatskogo Universiteta Khimicheskoi Nauki. Tashkent.
- Trudŷ tashkent. geofiz. Observ.** Trudŷ Tashkentskoĭ Geofizicheskoi Observatorii.
- Trudŷ tom. Univ.** Trudŷ Tomskogo Universiteta. Tomsk.
- Trudŷ ukrain. nauch.-issled. gidrometeorol. Inst.** Trudŷ Ukrainskogo Nauchno-Issledovatel'skogo Gidrometeorologicheskogo Instituta. Kiĭv.
- Trudŷ ul'yanov. s.-kh. Inst.** Trudŷ Ul'yanovskogo Sel'sko-khozyastvennogo Instituta.
- Trudŷ voronezh. gos. Zapovednika.** Trudŷ Voronezhskogo Gosudarstvennogo Zapovednika.
- Trudŷ voronezh. Univ.** Trudŷ Voronezhskogo Universiteta. Voronezh.
- Trudŷ vsesoyuz. Inst. Zashch. Rast.** Trudŷ Vsesoyuznogo Instituta po Zashchite Rastenii.
- Trudŷ vsesoyuz. nauch.-issled. Inst. Khlopk.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta po Khlopkovodstvu. Tashkent.
- Trudŷ vsesoyuz. nauch.-issled. Inst. kondit. Promŷsh.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Konditerskoĭ Promŷshlennosti.
- Trudŷ vsesoyuz. nauch.-issled. Inst. Mekh. s.-Kh.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Mekhanizatsii sel'skogo Khozyaistva. Moskva.
- Trudŷ vsesoyuz. nauch.-issled. Inst. pivoar. Promŷsh.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Pivovarennoi Promŷshlennosti.
- Trudŷ vsesoyuz. nauch.-issled. Inst. s.-kh. Mikrobiol.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Sel'sko-Khozyaistvennoi Mikrobiologii. Leningrad.
- Trudŷ vsesoyuz. nauch.-issled. vitaminnoĭ Inst.** Trudŷ Vsesoyuznogo Nauchno-Issledovatel'skogo Vitaminnoĭ Instituta.
- Tuinbouwġids.** 's Gravenhage.
- Tuinbouw. Onderz. Jversl.** Tuinbouwkundig Onderzoek. Jaarverslag. 's Gravenhage.
- Tunisie agric.** Tunisie Agricole. Tunis.
- Türk. Jeol. Kur. Bull.** Türkiye Jeoloji Kurumu, Bülteni. Ankara.
- Türk. vet. Hekim. dern. Derg.** Türk Veteriner Hekimleri Dernegi Dergisi.
- Turrialba.** Costa Rica.

- U.S. Atomic Energy Comm. tech. Inform. Serv.** United States Atomic Energy Commission. Nuclear Science Abstracts. Office of Technical Services. Department of Commerce. Washington.
- U.S. civ. aero. Adm. tech. Devel. Rep.** United States Civil Aeronautic Administration. Technical Development Report. Washington.
- U.S. For. Serv., S. For. Exp. Sta. occ. Pap.** Southern Forest Experiment Station. Forest Service U.S. Department of Agriculture. Occasional Paper. New Orleans, La.
- U.S.D.A. Agric. Handb.** United States Department of Agriculture. Agriculture Handbook. Washington.
- U.S.D.A. Circ., Leaflet, misc. Publ., tech. Bull.** United States Department of Agriculture. Washington. Circular. Leaflet. Miscellaneous Publication. Technical Bulletin.
- U.S.D.A. Fmrs Bull.** United States Department of Agriculture. Farmers' Bulletin. Washington.
- U.S.D.A. Soil Conserv. Serv. Agric. Inform. Bull.** United States Department of Agriculture. Soil Conservation Service. Agriculture Information Bulletin. Washington.
- U.S.D.A. Soil Conserv. Serv. Soil Surv. Lab. Memor.** United States Department of Agriculture. Soil Conservation Service. Soil Survey Laboratory Memorandum. Washington.
- U.S.D.A. Soil Conserv. Serv. tech. Pap.** United States Department of Agriculture. Soil Conservation Service. Technical Paper. Washington.
- U.S.D.A. Yearb. Agric.** United States Department of Agriculture. Yearbook of Agriculture. Washington.
- Uchen. Zap. Alma-Atinsk. gosudarst. pedagog. Uchitel'sk. Inst.** Uchenye Zapiski Alma-Atinskogo Gosudarstvennogo Pedagogicheskogo i Uchitel'skogo Instituta. Alma-Ata.
- Uchen. Zap. azerbaidzhan. Univ.** Uchenye Zapiski Azerbaidzhan-skogo Universiteta.
- Uchen. Zap. chkalov. Inst.** Uchenye Zapiski Chkalovskogo Sel'sko-Khozyaistvennogo Instituta Imeni. A. A. Andreeva. Chkalov.
- Uchen. Zap. gor'kov. Univ.** Uchenye Zapiski Gor'kovskogo Universiteta. Gor'kiĭ.
- Uchen. Zap. kazan. Univ.** Uchenye Zapiski Kazanskogo Universiteta. Kazan'.
- Uchen. Zap. leningrad. gosudarst. Univ. Zhdanova.** Uchenye Zapiski Leningradskogo Gosudarstvennogo Universiteta Imeni Zhdanova. Leningrad.
- Uchen. Zap. tom. Univ.** Uchenye Zapiski Tomskogo Universiteta. Tomsk.
- Uchen. Zap. yaroslav. s.-kh. Inst.** Uchenye Zapiski Yaroslavskogo Sel'sko-khozyaistvennogo Instituta.
- Uitv. Versl. Bosbpr. Sta. TNO.** Uitvoerige Verslagen van het Bosbouwproefstation T. N. O. Wageningen.
- Umschau.** Frankfurt a. M. & Leipzig.
- Umschaul. LandschPfl. Landschaftsgest.** Umschauldienst des Forschungsausschusses "Landschaftspflege und Landschaftsgestaltung" der Akademie für Raumforschung und Landesplanung. Hannover.
- Unasylva.** Washington.
- Unesco Symp. Prot. Conserv. Nature Near East, Beirut.** Unesco Beyrouth. Symposium on the Protection and Conservation of Nature in the Near East. Cairo.
- Univ. Bristol Dep. Econ. Rep.** University of Bristol Department of Economics. Report. Newton Abbot.
- Univ. Coll. Ibadan Dep. Geogr. Res. Notes.** University College Ibadan. Department of Geography. Research Notes. Ibadan.
- Univ. Microfilms Publ.** Universities Microfilms. Publication. Ann Arbor, Mich.
- Univ. Natal Wattle Res. Inst. Rep.** University of Natal, Wattle Research Institute. Report. Pietermaritzburg.
- Univ. Toronto For. Bull.** University of Toronto Forestry Bulletin. Toronto.
- Univ. W. Aust. Inst. Agric.** University of Western Australia. Institute of Agriculture. Report. Nedlands.
- Urania (Germany).**
- Usp. sovremennoi Biol.** Uspekhi Sovremennoi Biologii. Moskva.
- Utah agric. Exp. Sta. Bull. spec. Rep.** Utah Agricultural Experiment Station. Bulletin. Special Report. Logan.
- Uttar P'radesh Dep. Agric. Bull.** Department of Agriculture Uttar Pradesh. Bulletin. Uttar Pradesh.

- Va Truck Exp. Sta. Bull.** Virginia. Truck Experiment Station. Bulletin. Norfolk.
- Vakbl. Biol.** Vakblad voor Biologen. Helder.
- Valt. Maatalousk. Julk.** Valtion Maatalouskoetöiminnan Julkaisuja. Helsingfors.
- Valt. Maatalousk. Tiedon.** Valtion Maatalouskoetöiminnan Tiedonantoja. Helsinki.
- Van Zee tot Land.** Zwolle, Holland.
- Växt-när.-nytt.** Växt-närings-nytt. Stockholm.
- Věd. Práce výzk. Úst. Rostl. Výr.** Vědecké Práce Výzkumného Ústavu Rostlinné Výroby ČSAZV v Praze-Ruzyni. Praha.
- Veröff. Bundesanst. alp. Landw. Admont.** Veröffentlichungen der Bundesanstalt für Alpine Landwirtschaft in Admont.
- Veröff. int. Ass. Hydrol.** Veröffentlichung der Internationalen Assoziation für Hydrologie. Roma.
- Versl. Inst. landb. Onderz. Wageningen.** Verslagen van het Centraal Instituut voor Landbouwkundig Onderzoek. Wageningen.
- Versl. landb. Onderz. 's Grav.** Verslagen van Landbouwkundige Onderzoekingen. 's Gravenhage.
- Versl. RijkslandbProefst. 's Grav.** Verslagen van Landbouwkundige Onderzoekingen der Rijkslandbouwproefstations. 's Gravenhage.
- Vestn. Akad. Nauk.** Vestnik Akademii Nauk S.S.S.R. Moskva.
- Vestn. Akad. Nauk kazakh. SSR.** Vestnik Akademii Nauk Kazakhskoi S.S.R. Alma-Ata.
- Vestn. Ieningrad. Univ.** Vestnik Leningradskogo Universiteta. Leningrad.
- Vestn. moskov. Univ.** Vestnik Moskovskogo Universiteta. Moskva.
- Vestn. moskov. Univ. Ser. fiz. mat. estestven. Nauk.** Vestnik Moskovskogo Universiteta. Seriya Fiziko-Matematicheskikh i Estestvennykh Nauk. Moskva.
- Vestsi Akad. Nauk belorus. SSR.** Vestsi Akademii Nauk Belorusskoi S.S.R.
- Vict. Soil Conserv. Auth.** Victoria Soil Conservation Authority. Melbourne.
- Vict. St. Riv. Wat. Supply Comm. tech. Bull.** State Rivers and Water Supply Commission. Victoria. Technical Bulletin. Melbourne.
- Vin. Viñ. Frut.** Vinos, Viñas y Frutas. Buenos Aires.
- Vinárství.**
- Vinodel. Vinograd.** Vinodelie i Vinogradarstvo S.S.S.R. Moskva.
- Virology.** Baltimore.
- Vitam. Horm.** Vitamine und Hormone. Leipzig.
- Vjschr. naturf. Ges. Zürich.** Vierteljahrschrift der Naturforschenden Gesellschaft in Zürich.
- VoorlBl. centr. Suik. Maatsch.** Voorlichtingsblad van de N.V. Centrale Suiker Maatschappij.
- Vopr. Razv. Kul'tur'y Chaya nov. Raion. SSSR.** Voprosy Razvitiya Kul'tury Chaya b Novykh Raionakh S.S.S.R.
- Vopr. Ulushch. korm. Baz. step. polupustyn. pustyn. Zon. SSSR.** Voprosy Ulushcheniya Kormovoi Bazы v Stepnoi Polupustynnoi i Pustynnoi Zonakh S.S.S.R.
- Vsesoyuz. Nauki Inst. maslich. Kul'tur.** Vsesoyuznye Nauki Instituta Maslichnykh Kul'tur. Krasnodar.
- W. Scot. agric. Coll. adv. Leaf.** West of Scotland Agricultural College. Advisory Leaflet. Glasgow.
- W. Va agric. Exp. Sta. Bull.** West Virginia Agricultural Experiment Station. Bulletin. Morgantown.
- Wash. agric. Exp. Sta. Bull.** Washington Agricultural Experiment Station. Bulletin. Pullman.
- Wass. u. Boden.** Wasser und Boden. Hamburg.
- Wass. u. Nahrung.** Wasser und Nahrung.
- Wasserwirtschaft.** Stuttgart.
- Wat. & Sewage Wks.** Water and Sewage Works. Chicago.
- Weather.** London.
- Weeds.** Ithaca, N.Y.
- Weinberg u. Keller.** Weinberg und Keller. Frankfurt a.M.
- Werkst. u. Korrosion Mannheim.** Werkstoffe und Korrosion. Mannheim.
- Wett. u. Leben.** Wetter und Leben. Zeitschrift für Praktische Bioklimatologie. Wien.
- Wis. agric. Exp. Sta. Bull.** Wisconsin Agricultural Experiment Station. Madison.
- Wis. Coll. Agric. Circ.** University of Wisconsin College of Agriculture. Circular. Madison.

- Wiss. Z. Fr.-Schiller Univ. Jena, Math.-naturwiss. Reihe.** Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität Jena, Mathematisch - Naturwissenschaftliche Reihe. Jena.
- Worces. agric. Chron.** Worcester-shire Agricultural Chronicle. Worcester.
- World Crops.** London.
- Wye Coll. Dep. Hop Res. Rep.** Wye College Department of Hop Research. Report. Ashford, Kent.
- Wyo. agric. Exp. Sta. Bull.** Wyoming University Agricultural Experiment Station. Bulletin. Laramie.
- Yale Sch. For. Bull.** School of Forestry Yale University. Bulletin. New Haven, Conn.
- Yearb. roy. vet. agric. Coll. Copenhagen.** (Also under: K. Vet-Højsk. Aarsskr.) Yearbook. Royal Veterinary and Agricultural College. Copenhagen.
- Yugoslav Soc. Soil Sci. first Meet.** First meeting of the Yugoslav Society of Soil Science. Beograd.
- Z. Acker- u. PflBau.** Zeitschrift für Acker- und Pflanzenbau. Berlin.
- Z. anal. Chem.** Zeitschrift für Analytische Chemie. Wiesbaden.
- Z. angew. Ent.** Zeitschrift für angewandte Entomologie. Berlin.
- Z. angew. Zool.** Zeitschrift für angewandte Zoologie. Berlin.
- Z. Met.** Zeitschrift für Meteorologie. Potsdam.
- Z. Pflanzenz.** Zeitschrift für Pflanzenzüchtung. Berlin.
- Z. PflBau.** Zeitschrift für Pflanzenbau und Pflanzenschutz. München.
- Z. PflBau Sonderh.** Zeitschrift für Pflanzenbau und Pflanzenschutz. Sonderheft. München.
- Z. PflErnähr. Düng.** Zeitschrift für Pflanzenernährung und Düngung (und Bodenkunde). Leipzig.
- Z. PflKrankh.** Zeitschrift für Pflanzenkrankheiten (Pflanzenpathologie und Pflanzenschutz). Stuttgart.
- Z. Ver. dtsch. Ing.** Zeitschrift des Vereins Deutscher Ingenieure. Berlin.
- Z. Weltfw.** Zeitschrift für Weltforstwirtschaft. Berlin.
- Za social. Zeměd.** Za Socialistické Zěmědelství. Praha.
- Za sotsial. s.-kh. Nauku.** Za Sotsialisticheskuyu Sel'sko-khozyaistvennuyu Nauku. Praha.
- Zbl. Bakt.** Zentralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten. Jena.
- Zbl. ges. Forst- u. Holzw.** Zentralblatt für die Gesamte Forst- und Holzwirtschaft. Wien.
- Zbl. ges. Forstw.** Zentralblatt für das gesamte Forstwesen. Wien.
- Zborn. I. Kongr. Biol. Jugoslav.** Zbornik I. Kongres Biologa Jugoslavije. Zagreb.
- Zborn. Matice Srpske Ser. prirod. Nauka.** Zbornika Matice Srpske, Serija Prirodnih Nauka. Novi Sad.
- Zborn. Rad. Poljopr. Fak. Univ. Beogradu.** Zbornik Radova Poljoprivrednog Fakulteta, Univerziteta u Beogradu. Beograd.
- Žemdirb Dirvožem Inst. Darbai.** Liet. TSR Mok. Akad. Žemdirbystės ir Dirvožemio Instituto Darbai. Lietuvos TSR Mokslų Akademija. Vilnius.
- Zemledelie.** Київ.
- Zemlj. Bilj.** Zemljište i Biljka Belgrade.
- Zesz. nauk. wyś. Szkół. rol. Kraków Rol.** Zeszyty Naukowe Wyższej Szkoły Rolniczej Kraków Rolnictwo. Krakow.
- Zesz. nauk. wyś. Szkół. rol. Wrocław Melior.** Zeszyty Naukowe Wyższej Szkoły Rolniczej Wrocław Melioracja. Wrocław.
- Zesz. nauk. wyś. Szkół. rol. Wrocław Rol.** Zeszyty Naukowe Wyższej Szkoły Rolniczej Wrocław Rolnictwo. Wrocław.
- Zh. obshch. Biol.** Zhurnal Obshchei Biologii. Moskva.
- Zh. priklad. Khim.** Zhurnal Prikladnoy Khimii. Moskva-Leningrad.
- Zh. tekh. Fiz.** Zhurnal Tekhnicheskoy Fiziki. Moskva.
- Zhivotnovodstvo.** Moskva.
- Zool. Anz.** Zoologischer Anzeiger. Leipzig.
- Zool. Jb.** Zoologische Jahrbücher. Jena.
- Zool. Zh.** Zoologicheskii Zhurnal. Moskva.
- Zucker.** Hannover.
- Zuckerrübe.**

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